

American FRUIT GROWER

APRIL • 1950



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DAVID HOLMES HARRY HOLMES

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Profits grow on trees—for growers who have long depended on Dow for effective materials to fight apple scab and other enemies of top fruit production. Men who make the most of their orchard investments know that Dow insecticides and fungicides can be relied upon for protection of foliage and fruit from dormant season to harvest time.

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Ideal for application direct to soil, too. Concentrated 44% nitrogen. Readily available to plants yet resists leaching.

How to use "NuGreen"—Be sure to ask your fertilizer dealer for free booklets giving details, including proper concentrations and timing. Ask him for a copy of "Du Pont 'NuGreen' for Apples," or write to Du Pont, Nitrogen Products Section, Wilmington 98, Delaware.



Pictured here are some of the nationally-known ORTHO products that will save growers time, labor, crops and cash in 1950!



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THIS MONTH'S COVER

"For, lo! the winter is past" and spring has come, at last, to the fruit grower. Promise of a bountiful harvest is evidenced on this month's cover of orchards near Salem, Ore. Photo by Gifford.

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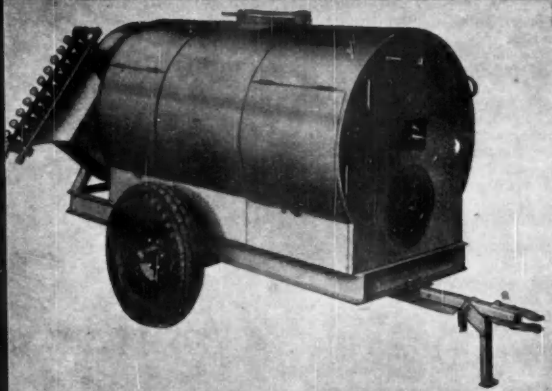
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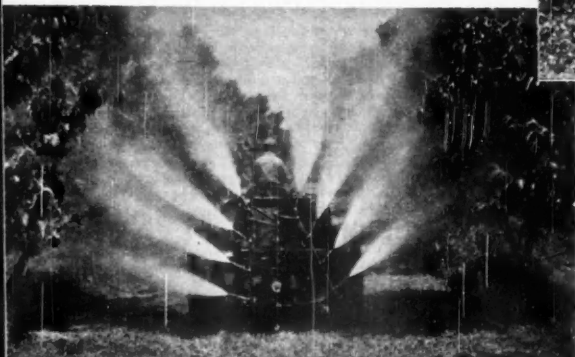
The new John Bean Auto-Mist gives you the drive and capacity necessary for successful application of concentrates. The oscillating fish-tail discharge puts out a volume of high-velocity air to get through the trees and give saturating coverage. Low branches and undersides of leaf get protection because of Auto-Mist's low profile that drives material up into the tree. You can quickly adjust the oscillating stroke to get the correct coverage in trees of different size, and the Auto-Mist will spray to either the left or right. These are just a few of the outstanding features of this new sprayer in the John Bean line that will give you better-than-ever crop protection. Write for free Auto-Mist catalog and see the many advantages Auto-Mist holds for you.

Lowest costs, full crop protection and top efficiency are yours with John Bean equipment, regardless of the spraying method that you prefer. Speed Sprayer is the standard of performance for the fast, complete coverage with dilutes or concentrates. Low-Boy spray mast with one of the orchard-proven John Bean high pressure sprayers brings conventional applications to new highs in speed, labor saving, and cost cutting. The new Auto-Mist is your most efficient answer to the application of semi-concentrates or concentrates. Get two-way protection of crop and profits by selecting the John Bean equipment that's perfectly matched to your methods in your orchard.



Speed Sprayer's 4-way control gives you complete flexibility of operation. Spray right, spray left, spray both ways, spray extra high for the biggest trees. Controls are mounted so the tractor driver can operate them and "keep his eyes on the road."

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LETTERS TO THE EDITOR

Winter Injury

Gentlemen:

We have a four-year-old peach orchard. This year, due to -26° weather, they seem to be hard hit. Will these trees come back? Can anything be done to save them? Grand Rapids, Mich. Mrs. Andrew Visser

Injury from spring frost is usually overestimated, but injury from winter cold is usually underestimated. Damage may be done which does not show up for several years and which insidiously works to weaken the tree, increase breakage, increase inroads of diseases and insects, and altogether make for unprofitable fruit production. And so the general rule is to err on the side of removing injured trees and replanting.

On the other hand, the peach has marvelous powers of recovery. Sometimes, winter-injured trees may be kept going for two or three seasons and may produce crops when the market is short, which will pay for the gamble. However, -26° F. means no live fruit buds in 1950 and considerable tree damage. Most growers would decide to replant under such conditions.—Ed.

Another Rabbit Repellent

Dear Sir:

Dr. William F. Pickett, Kansas State College, says that a very effective repellent can be made by dissolving resin in methanol or methyl alcohol at the rate of one pound of resin per pint of liquid and painting it on tree trunks.

Farmington, Mo.

G. David Bauch
Farm Forester

Government Controls

Dear Editor:

I was much interested in W. D. Plough's letter from Wenatchee, Wash. (January, 1950 issue). He spoke what I have had in mind for a long time. We see support prices for pork and eggs; then in my State comes one of the most disgusting things I ever heard of—the Spud deal.

We fruit growers take our rap on the chin and don't get any help from the government. I think it is high time to stop taking the taxpayers' money to pay off this foolishness over the country and let things level off to where we can live and let live. Emmett, Idaho

J. W. Hunter

Oldest Apple Tree

Gentlemen:

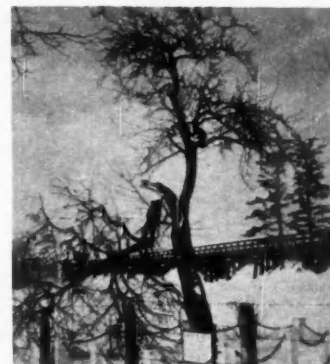
The severe ice storm that broke in the Vancouver, Wash., and Portland, Ore., area on January 17, 1950, covered all trees and shrubs with from one to three inches of ice, causing losses up to 90 per cent in orchards and nurseries throughout the district.

To older settlers, horticultural societies, and those interested in Northwest history, there was no worse casualty of the storm than the loss, by breaking under the weight of ice, of one of the two remaining large laterals of the "Old Apple Tree" at Fort Vancouver.

Historians have put forth an interesting and romantic story of this, the Northwest's oldest living and bearing apple tree. In 1826 at a dinner party given in London in honor of a group of men departing for the Northwest Pacific Coast for the Hudson Bay Company, a young lady carefully saved the seeds from the apple she was eating and placed them in the suit pocket of one of the young men, asking him to plant them on his arrival in the New World.

The seeds were planted at Fort Vancouver, under the eyes of Dr. John McLoughlin, chief factor. The seeds germinated and one tree lived. A few years later the first crop consisted of one apple which was carefully picked by Dr. McLoughlin and divided into 17 pieces, one for each guest at the dining hall that evening. The following season the tree bore 20 fruits and has continued to bear almost every year to the present.

Whether the legend of the Old Apple Tree is authentic or not is of little consequence, but those who have studied the Hudson Bay Company's exceptional devel-



opment under Dr. McLoughlin and the final establishment of Fort Vancouver, know that by 1836 some 10 acres of good bearing orchard were growing at the fort farms. Even if the tree were from this orchard, it is not less than 120 to 125 years old, making it still the oldest apple tree in the Pacific Northwest.

It is sincerely hoped by historians, old-timers, and horticulturally interested persons in Washington and Oregon that steps will be taken at once to try to preserve the remaining part of the old tree.

Vancouver, Wash.

Roy C. McCue

Pesticides Stop Grazing

Dear Editor:

In the August, 1949, issue of AMERICAN FRUIT GROWER, in Letters to the Editor, there were comments regarding grazing of sheep in an orchard.

Considering that much of the poisonous spray materials falls to the ground and collects on the grasses beneath and around the trees, wouldn't it be dangerous to graze sheep or any other domestic animal in the orchard through the summer? I have heard that rabbits are immune, partially or wholly, to arsenic poison; but I have never heard of sheep or other animals being immune.

I wonder if there is any domestic animal which could be safely grazed in an apple orchard, and if so, what spray materials could be, or should not be, used effectively spray the trees.

Scottsville, N. Y.

C. K. Potter

Animals are not immune to arsenic, but they can build up a tolerance for it much the same way as did the codling moth. Reader Potter is right in saying that it would be dangerous to graze sheep or other domestic animals in the orchard during the spraying season without regard to the material used. Some materials such as sulfur, may do no harm, but others are more potent.—Ed.

AMERICAN FRUIT GROWER

Parathion News[®]

MANUFACTURERS REPORT ORCHARDISTS HIGHLY PLEASED WITH PARATHION INSECTICIDES

Operators of insecticide-mixing plants in fruit-growing areas can be expected to be in close touch with the users of their products and to have first-hand knowledge of their reactions. A Washington State manufacturer recently gave a highly enthusiastic report to a Cyanamid field representative about acceptance of his insecticides containing THIOPHOS[®] Parathion. "Not one complaint from growers" regarding results was his report after over 150 tons had been applied in the area.



APPLES ARE JUST ONE of the many fruit crops that are protected and improved in quality by wettable powders and dusts containing THIOPHOS Parathion.

In California, where dusts and sprays containing THIOPHOS have been used on a wide variety of fruit pests, a local manufacturer reports equal enthusiasm among his customers for this new pest-killer.

Remarkable for the degree of protection they afford such fruits as apples, grapes, peaches, pears, prunes, plums, strawberries and walnuts, parathion insecticides kill most pests found on these crops — even the aphids, mites and bud moth usually unaffected by most modern insecticides.

Thiophos Parathion Insecticides made by National Manufacturers

Dust and wettable-powder formulations made from THIOPHOS Parathion are available from reputable manufacturers.

Weather, Timing, Method of Application Important Factors In Successful Use of Parathion

To profit fully from the efficiency of parathion as a pest-killer, farmers and fruit growers are being urged by Federal and State agricultural experts to observe carefully the manufacturers' instructions for applying parathion to specific crops. Such factors as weather, timing in relation to the development of the crop and insects, and method of application are known to be just as important as the correct dosage in achieving best results. For this reason, users are advised to consult with local agricultural experts or manufacturers' representatives to be sure of getting the most complete pest control and crop protection with this remarkable insecticide.

Use Parathion Safely

Any insecticide toxic to insects is also hazardous to humans if used carelessly and in defiance of certain common-sense precautions.

These precautions are stated explicitly on every container of parathion insecticides. They must be read carefully and observed strictly to avoid accidents.

It is urged that work crews who are given parathion to apply be fully advised also of the necessity of observing these precautions.

Be sure to write for Growers' Manual on Parathion

AMERICAN Cyanamid COMPANY

Agricultural Chemicals Division

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Please send me Growers' Manual giving latest recommendations for using Parathion.

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AMERICAN FRUIT GROWER



Baldwin on Malling IX—two years old; a garden plant.



Cortland on the Malling XIII rootstock, a semi-dwarf.

THE SMALL, CONTROLLED FRUIT TREE

By H. B. TUKEY, Michigan State College

THE QUEST continues for the small, controlled apple tree adapted to efficient pruning, spraying and harvesting of uniform, quality fruit and suited to the rotation orchard.

While present standard-size fruit trees have given a good account of themselves, there is still much to be desired. Pruning and harvesting operations are expensive. Large trees require powerful equipment to secure coverage clear to the tops. The new semi-concentrates and the one-man outfit call for small trees. Competition says that it is the young tree that is the most profitable.

And so the apple grower still dreams of a tree in full production at five to seven years of age, continuing perhaps 20 years, and then to be replaced with a rotation block of new, young trees.

It is true that considerable progress already has been made in keeping present standard apple trees small and in getting them into production early. Reliance on well-grown nursery stock, careful selection of soil and site, low-heading, little pruning, careful attention to keeping the tree free from devitalizing insect and disease troubles, proper use of fertilizers, water, and mulch—all of these have helped. But there is still more that is wanted, and so there is continued interest in the so-called "dwarf" and "semi-dwarf" fruit trees.

Experimentation has reached the point where growers and nurserymen must accept some of the testing of dwarf stocks to determine their worth in commercial fruit growing.

Thus far, reliance for such trees has been on the "Malling rootstocks," 16 in number, which derive their name from the East Malling Research Station in England where they were standardized and from which they were disseminated. These rootstocks are propagated not by seed but by such vegetative means as layers, stem cuttings, nurse-root

grafts, root cuttings, and the like. Onto these rootstocks the desired varieties are budded and grafted. The resulting trees range in size from one no taller than a man to one not dwarfing at all.

Although they have been called "English rootstocks" and have been considered new and perhaps tender to winter cold, this is not entirely the case. To be sure, they were standardized and introduced relatively recently to America from England, yet only four of the 16 are of English origin. The others have come from Europe, and some are probably several centuries old.

They have been widely used in Europe, and they have proved sufficiently hardy over a 20-year period in the more favored commercial apple-producing sections of America. From 210 combinations with American apple varieties, no incompatibilities have yet been found.

Trials have gradually narrowed the field and have cataloged the value of these rootstocks for American conditions to considerable degree. For example, the Malling III, IV, VI and VIII have been temporarily, at least, eliminated. The roots of Malling III and VI sucker, Malling IV is poorly anchored and tends to blow over, and Malling VIII is weak and unpromising. Malling X, XI, XIV, and XV have not been sufficiently tested to give a proper evaluation.

(Continued on page 34)



McIntosh apple on the Malling I rootstock, a precocious semi-dwarf. Trees attain the size of a small sour cherry tree.



Gifford

While only five beehives are shown in the above photo, a grouping of as many as eight to 10 hives will prove advantageous.

FRUIT POLLINATION FROM A TO Z

By JOHN C. SNYDER, State College of Washington

MANY VARIETIES of fruits and nuts are self-unfruitful. To pollinate them you must use pollen from another variety and practice what is commonly referred to as cross-pollination. Others are partially self-fruitful and produce at least partial crops when pollinated with their own pollen. To be sure of full crops, you must also cross-pollinate some self-fruitful varieties.

Pollen-producing trees are known as pollinizers. Some pollinizers are popular commercial varieties but others are of value mainly because of their pollen. Some pollinizers are good for one variety and some are good for another, so pollinizers must be selected that will satisfy the needs of the self-unfruitful varieties (those requiring cross-pollination). Naturally, the more self-unfruitful varieties you have, the more attention you must give to pollination. That's why it is an important problem in the Northwest where Delicious and Winesap are the main apple varieties.

The arrangement of varieties when starting an orchard, as far as pollination is concerned, is a problem only when you grow self-unfruitful or partially self-unfruitful varieties. When

your planting is to include both self-fruitful and self-unfruitful varieties, you simply plant alternate strips of each. The self-unfruitful strip should never be more than four rows wide. In locations where pollination weather frequently is poor, two or at most three rows may be as far as you should go.

Occasionally you must use pollinizers that are valuable only for their pollen; that is, they are not varieties whose fruit the market demands. You then want to devote the minimum of space to pollinizers. In such cases, it is a fairly common practice to place a pollinizer in every third space of every third row. Then every ninth tree is a pollinizer and every self-unfruitful tree borders a pollinizer.

Some mature orchards do not contain enough pollinizers. The quickest way to correct the trouble is to graft pollinizer branches into some of the trees. One pollinizer branch per tree is usually adequate, but you may need two. Using yellow varieties offers some advantage in keeping the fruit separate during harvest. It is good insurance to graft a relatively early-blooming variety in one tree and a later one in the next; otherwise your

pollinizer may be a little too early or a little too late during some seasons.

To be most effective, pollinizer branches must be placed where insects are most likely to visit them. Place them on the warm side of the tree and out of the wind. Don't place them on the north side or on the side hit by a prevailing wind. In general, rather high on the south or southeast side is preferable.

These branches are valuable primarily as pollen producers. They must not be dwarfed out by other branches nor dare they dominate other major fruit-producing branches. As a rule, laterals or secondary branches arising rather high on leaders are satisfactory. Leaders or scaffolds represent too much bearing area on the tree.

Mark the pollinizer branches with paint to protect them from pruners. To ensure regular blossoming, thin early or remove all the fruit.

Whole trees as pollinizers offer some advantage in keeping the fruit separate during harvest. With branches, a continual effort must be made to keep them growing enough, but not too much. On the other hand, as whole trees become mature, the set of fruit in some cases becomes too heavy during favorable seasons. This trouble, which is particularly true of sweet cherries, need not be serious, inasmuch as the size of the pollinizer can be reduced by pruning.

Role of insects. Fruit pollen is carried by insects, but that of filberts and walnuts is carried primarily by wind.

There are many insects that carry fruit pollen, but the honeybee is by far

the most important. Others, such as the leaf-cutting bee and syrphus fly, work more freely during cool weather and probably do more good than is generally believed. The bumblebee is a good pollinator, too. She works when it is too cold for most other insects.

The management of pollinating bees is a specialized job that requires an understanding of bee nature. First of all, bees do not travel far. They

have been known to travel freely over a radius of two miles, but shortening this distance increases their efficiency. Because a bee can make three or four short trips in an hour, but can hardly make more than one long trip, placing the hives within the orchard is desirable.

The distance from the orchard is not necessarily the determining factor when trying to get bees to work on your trees. Once they start feeding on a certain kind of blossom they continue to feed on it until it is past, even though in the meantime another kind may come into bloom nearer the hive. They also prefer certain kinds of blossoms and, unfortunately, some of our fruits are not their favorites. The fact that the sugar content of some nectar is greater than that of others accounts at least in part for this preference.

The activity of a healthy, normal colony is determined largely by the temperature within the hive. The location of the hives in the orchard, therefore, is important, from the standpoint of keeping them warm, protected from the wind. The best place is in a sunny spot out of the wind.

It is not necessary to distribute the hives singly throughout the orchard. Placing them in groups of eight to 10 in warm and protected places not only promotes optimum activity, but facilitates bringing them into and taking them out of the orchard. Once they are located, they should not be disturbed until pollination is complete. The time of bringing them into the orchard in relation to blossom development determines whether they start working in the immediate orchard or in a neighboring orchard. The best time is just as the very first blossoms start opening. Earlier encourages them to go elsewhere and later may miss needed pollinating weather.

In general, one colony with four frames of bees per acre at cherry blossom time is adequate. These will build up to five frames by apple blossom time. On one frame, there are approximately 15,000 bees, which means 60,000 and 75,000 bees at cherry and apple blossom time, respectively.

Scientists have tried to force bees to distribute artificially-collected pollen. Traps designed to force the bees to pass through pollen upon leaving the hive have been attempted. Obviously, when leaving the hive for a load, the bee tries to free herself of any clinging material, but if she can be made to pass through pollen, she has no choice other than to carry a certain amount of it.

Experimental work shows that pollen placed in traps at the entrance of the hive soon disappears. Part of it is carried into the hive, some is fanned out, and some clings to the body of the bee. In any event, it is necessary to

renew the pollen frequently; how frequently can be determined by inspection. Obstructions of any kind—traps, brush, or boards—at the entrance of the hive, may hinder the much-desired free activity of the bees. It behooves orchardists when attempting to use traps to make sure that they function properly lest they not only fail to aid but actually hinder pollination.

Commercial hand pollination.

There are many hindrances to insect pollinators, including cool, rainy, or windy weather. During some seasons and in some areas, disturbing factors may threaten the chances of getting satisfactory pollination by natural means and human aids of various kinds have been found to be profitable. These vary from doing the complete job by hand to placing bouquets in the orchard.

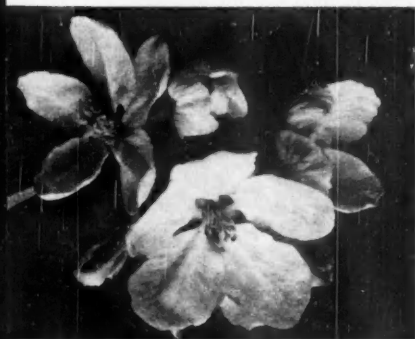
Commercial hand pollination of apples is now past the experimental stage. Growers with orchards in locations where pollination by natural means is uncertain consider it good insurance but generally prefer to establish enough pollinizers to take care of the uncertainty. Those who are short of pollinizers also find it profitable until they can establish natural pollinizers. There are few, if any, growers, however, who wish to substitute it for natural means.

Pollen obviously must be collected from the right variety. Self-fruitful varieties generally are satisfactory, and partially self-fruitful varieties are satisfactory for certain varieties.

Pollen grains are alive. They may be thought of as seed. Like seeds, they must be allowed to ripen if normal germination is to be expected. In nature, pollen remains in the blossoms until the pollen sacks or anthers open, but you must collect it just before they open; otherwise you lose part of it. The "balloon" stage is considered ideal. The pollen is then ripe and inside the anthers. Only during hot weather are any pollen sacks open at this time.

There are several methods of removing blossoms from the tree. A common one is to provide collecting receptacles such as wide-mouthed fruit jars that can be carried from branch to branch. The receptacle is usually attached to the waist, leaving both hands free. This method not only ensures fresh blossoms but also makes it unnecessary to prune off branches during the blossoming period. Of some significance, also, is the fact that removing blossoms aids in the thinning operation.

Another method is to delay pruning the pollinizers and to collect the pollen from the prunings. The pruned (Continued on page 40)



Closeup of apple blossoms showing balloon stage when pollen is ripe for collecting for hand pollination purposes; stage suitable for applying pollen; blossom too advanced for pollen application.



R. M. Bullock, Tree Fruit Experiment Station, Wenatchee, Wash., collecting pollen.



Applying pollen with a pig-hair brush. Bristles have been cut square and rubber band used to keep them from spreading.



CHEMICAL THINNING

Post-blossom hormone sprays show promise of being an effective means of thinning apples.

By F. W. SOUTHWICK and W. D. WEEKS
University of Massachusetts

done extensive work with these materials and have found them reasonably satisfactory.

At the present time, in the Northeast, the powder DN #1 appears to be satisfactory as liquid formulations, such as Elgetol or Krenite ($\frac{1}{2}$ lb. DN #1 is equivalent to 1 pint of liquid), in reducing fruit set, and generally it has been less injurious to foliage. The concentration used and timing suggested differs among varieties and for a given variety, depending upon such factors as the amount of bloom, type of blossoming weather, vigor of trees, number and position of cross-pollinating varieties, and the past tendency of the trees to overset.

In brief, since space does not permit a detailed discussion, the dinitros should be applied at full bloom or approximately a day thereafter, depending upon the variety. In general, the concentration range is from $\frac{1}{2}$ pound (or 1 pint) to 1 pound (or 1 quart) per 100 gallons of water.

The material apparently thins through its toxic action on pollen, preventing its germination, and on the pistil. Presumably flowers which have not been fertilized prior to the treatment are those which fail to set and drop off.

The chief disadvantages of the dinitros are: 1) They must be very accurately timed. 2) The extent of fruit set and the necessity for thinning cannot be determined at this time. This is particularly true when conditions for pollination and fertilization are not ideal. 3) In many seasons killing frosts are still a possibility following bloom.

In order to thin chemically after bloom, a material that influences fruit set by some means other than direct killing of tissues is necessary. The naphthaleneacetic acid type compounds, NAA (those widely used for control of preharvest drop of apples), appear to be such materials. Work by experimenters in Indiana and New Mexico in the early 1940's indicated that this hormone would reduce the set of some apple varieties when applied at or near full bloom. Later work in Michigan by J. A. Davidson and associates and eventually by others throughout the country shows that it may be of practical value to commercial orchardists in this regard when applied at calyx time or up to four weeks after calyx.

Recent attempts have been made to determine when thinning occurs following the use of this hormone and why the material causes certain flowers and young fruits to abscise but not others. On Golden Delicious in Amherst, applications at calyx and two and four weeks after calyx resulted in an increase in flower and fruit drop from 9 to 12 days following treatment. In other words, the effect on drop is not immediate. In fact, our data and some from Professors B. E. Struckmeyer and R. H. Roberts at Wisconsin indicate that prior to the period of increased drop the natural abscission process may be delayed for several days so that treated trees may have a heavier set temporarily than unsprayed trees.

An attempt was made to determine whether the selectivity of the material
(Continued on page 36)

WE ALL KNOW that in order to obtain suitable fruit size many varieties of apples which set heavily require thinning. To do this job by hand, however, is extremely laborious and costly. Also, although hand thinning will aid in improving the size of the remaining fruit, it is done so late (after the June drop) that flower bud formation for the following year is not appreciably influenced. Heavy cropping in one year leads to irregularity of production in following years.

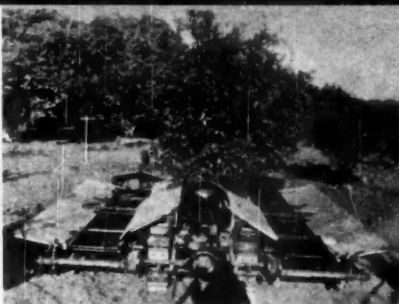
This tendency toward smaller fruit size and alternation becomes more pronounced as trees get older and can be a problem with virtually any variety, although some are inherently much more biennial in bearing habit than others.

Chemical thinning, which can be done earlier and much cheaper than hand thinning, offers the possibility of obtaining maximum benefits in fruit size for a given degree of thinning and by reducing the set early may tend to make some alternating varieties bloom annually.

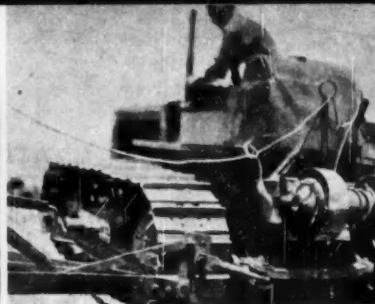
With these objectives in mind, many experimental and commercial trials of dinitro materials for thinning apples at blossom time have been made in the Northeast over the past 10 years. Dr. M. B. Hoffman and his associates in New York State have



This safety hitch developed by J. R. Gossler, Holt, Calif., permits driver from seat on truck and by means of a rope to unhitch trailer or hitch truck to trailer.



Vibration of tractor against tree trunks prunes onto sheet-metal wings; fruit rolls into conveyor, then to box at rear, in this A. Boeger development, Gridley, Calif.



Leo Kelly lengthened the hitch between tractor and implement, using his home welding outfit. Now he can make square turns in the hilly area near San Diego.

COST CUTTERS on the Pacific Coast

INGENUITY and inventiveness are being put to the test on the Pacific Coast in developing ideas and mechanical contrivances for cutting costs in orchard and grove. While fruit farms already are highly mechanized, the large expenditures for labor continue to influence the thinking of the grower along mechanical lines.

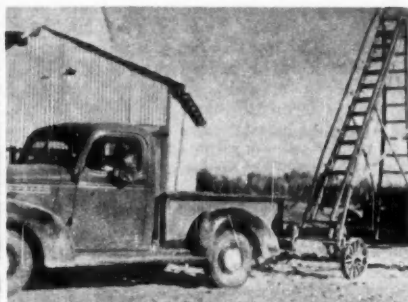
The results of this thinking and careful planning are culminating in many unusual short-cuts and laborsaving devices, some of which are illustrated on this page. The

savings effected in using a post-hole auger, for example, during the planting season, or a tractor-drawn sorting table in the orchard during harvesttime are tremendous.

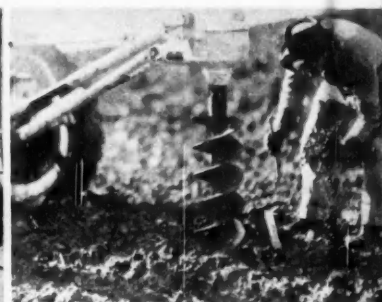
The West Coast is not alone in its cost-consciousness. The most discussed subject during the winter meetings of horticultural societies in the East and Middle West was that of reducing production costs. Necessity being the mother of invention, we shall look to these sections, too, for orchard cost cutters.



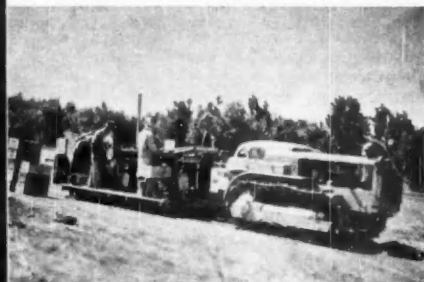
Spring guard prevents plow from hitting posts and vines in this late version of the old French vineyard plow, designed by Mitchell Brothers of Arvin, Calif.



The Arizona Experimental Farm superintendent near Yuma devised this mobile, adjustable ladder. Double section for lengthening has crescent-shaped fasteners.

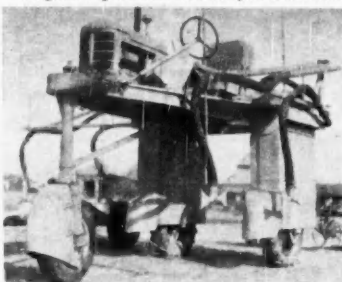


At the Welbel Vineyard in the Santa Clara Valley much time and labor are saved by using a post-hole auger on rear of tractor for digging holes for the young vines.

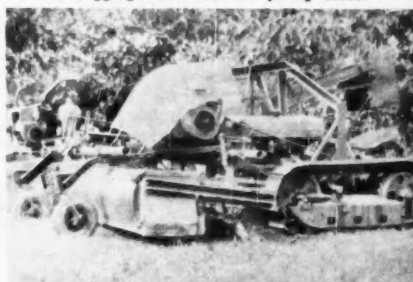


Portable tractor-drawn sorting table in the Bingham Orchards at Patterson, Calif., drastically cut labor costs, thus increasing profits the past three seasons.

APRIL, 1950



Dusters are going up! This high-clearance vineyard duster was built by Mitchell Brothers to more effectively control the pests on their grapes in Arvin, Calif.



This tung-nut harvester is an adaptation of the almond harvester developed by A. D. Goodwin and son on their prune and almond grove near Manteca, Calif.

Photographs by Hal Higgins

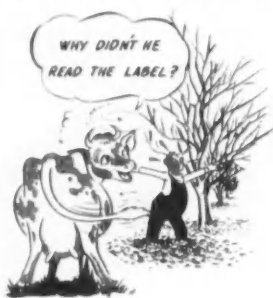
WHY READ A SPRAY DOPE LABEL?

By DON W. SANFORD, The Dow Chemical Company

YOU DON'T have to be a chemist to use agricultural chemicals. But you should take a good look at the label on any chemical you do use. Chemists and technicians who develop insecticides, fungicides, weed killers, etc., tell you how to use their products and they tell you how on the label.

By law, labels accompany the products you buy. Behind each new product that is marketed stands the label. Into it goes the knowledge of the entire chemical industry and the government agencies set up for the protection and guidance of the public. You can get ample directions from leaflets published by many manufacturers but adequate use directions are always on the label. The first important step in using any agricultural product should be—read the label.

A dealer friend of mine serves the dairy and fruit industries. He carried a product we'll call "Fly-Go," which was a splendid spray for flies



on cattle. He also carried a product we will call "High-Grow," which was a very nice summer oil for use on fruit trees.

One day a grower phoned in an order for a drum of "High-Grow." Over the party line that wasn't very clear, the clerk may have misunderstood the grower, maybe the grower had his teeth out or had a cold; anyway, the clerk thought he said "Fly-Go" and he shipped him a drum.

The grower or his help didn't read the label; they just dumped it in the spray rig and gave the trees the accustomed coverage. A few days afterwards he thought his trees looked a little poorly. He didn't eat much supper that night and he couldn't

To most fruit growers, Don Sanford needs no introduction. Mr. Sanford is one of the best informed bug and beetle men in the country and as assistant manager of agricultural chemical sales of one of the leading chemical producers, he is an old hand at the business of supplying orchardists with insecticides and fungicides. In this article, he writes of the importance of using spray chemicals correctly and how careful reading of the spray dope label can save many unfortunate losses. The cases cited are authentic but for obvious reasons the exact details and names have been omitted. We urge all growers to pay heed to Mr. Sanford's warning.—Ed.

sleep. Finally, he got up and took his flashlight and went out to the barn. He then read the label! He got in his pickup and drove out to the orchard—the trees were completely defoliated.

It's good business from a money standpoint to look at the label. Manufacturers aren't bashful about telling you what's in their product. The government closely regulates the statements that are required on package labels; many manufacturers exceed the minimum requirements.

In another instance, a customer came into a store and said, "I want something to kill crab grass." The clerk thought he said quack grass. Or else he didn't read the label. Anyway, the clerk sold him TCA. The fellow took it home and used it on his very nice lawn. Of course it killed every spear of grass. If he had read the label, he would not have killed his grass. The label says very specifically that the product will kill all grass.

Jobbers and retailers of agricultural chemicals are under a responsibility to their customers to read the label. A word of caution, a recommendation to the grower concerning the use of material he is buying may save the retailer and the grower many headaches.

Look at the label on any agricultural chemical product; it tells you: 1) what the product is; 2) what it's for; 3) what's in it; 4) how to use it; 5) where to use it; 6) important precautions; and 7) who makes it.

Any one of these is important to the user—all of these on one label

makes it an important piece of paper for you to read.

One of our fruit growers had used dry lime sulfur for years. In all the old directions we referred to dosages



to be mixed with 50 gallons of water. This grower had used four pounds in 50 gallons of water for years. Then one day, to make the arithmetic easier in measuring dosages per gallon of water, we changed our instructions to dosages required to make up 100 gallons of spray. When we did that, we said to use eight pounds of dry lime sulfur in 100 gallons of water.

The grower just noticed the 100 gallons of water and went right on using his little four-pound measure. Of course, he used just one-half the dosage.

Fortunately, he got splendid results. From that experience of his, we found out that we could use considerably less chemical and still get good results. That mistake worked in reverse—he didn't do any damage but he could have missed control!

Parathion, one of the newer, more potent insecticides is highly toxic to human beings under certain conditions. Disregarding label directions in this case can be highly dangerous to you and your employees. Using parathion according to label directions provides you with a highly effective insecticide for many uses.

We had a customer who used Dowspray Dormant for years. The recommendation was two gallons per 100 gallons of water. We came out with a new DN-289, which was a more concentrated product than our

(Continued on page 33)



• Northwest Reports on Freeze Damage • New Varieties in South Are More Cold-Resistant

WASHINGTON—The extent of damage to fruit buds and trees as a result of the severe freezes during January and February will not be definitely known for some time; however, a mid-March appraisal of possible damage, according to area, follows:

CENTRAL WASHINGTON, Mar. 16

—The low temperatures killed fruit buds on peach, apricot, Santa Rosa plum, cherry trees, and Concord grape vines. They also discolored pith, bark, and woody tissues on nearly all varieties of fruit. In some areas, the bark and cambium tissues of peach, apricot, cherry, prune, and Santa Rosa plum trees were killed immediately above the "snow line."

Fortunately, the trees went into the winter when they were fully dormant, and the general pattern of injury is based on the resistance of the variety or species of fruit rather than on the immature condition of the trees.

Apple trees in general show but slight injury and should produce a normal crop of fruit. Most of the injury occurs on the Rome and Jonathan varieties. In pears, the Bartlett variety is the most severely injured. Trunk injury in pears is rare and there should be little or no loss of trees.

Injury to sweet cherry trees varies from orchard to orchard. In the lower Yakima Valley trunk injury is severe and some tree loss is expected. A fair crop of cherries is expected but size may be a problem due to the spur and twig damage.

Nearly all peach fruit buds were killed. No 1950 commercial crop is expected. J. H. Hale shows the most severe damage. Loss of peach trees will be considerable. Bud injury is less severe on apricots than on peaches but only a shadow of a crop is expected.

There is severe bud killing on Santa Rosa plums but as in the case of apricots, there still remain a few live buds in the extreme tree tops. Trunk injury is severe and will take some toll of trees. The winter damage to Italian prune trees is restricted largely to old spurs and devitalized fruiting limbs. Some trees four to six years old in the lower Yakima Valley show severe trunk damage. A good crop of fruit should be produced generally and loss of older bearing trees should be negligible.—W. A. Luce, Assoc. Ext. Agent, Yakima.

WENATCHEE, Mar. 17—The low temperatures of 1949-50 in the Wenatchee area were not of as long duration as the previous year but were lower and caused more injury to fruit buds and wood growth of stone fruit trees than occurred in 1948-49.

At the Tree Fruit Experiment Station, Wenatchee, the December, 1949, minimum temperature was 7°; for January, 1950, —22°; and for February, —24°. January and February temperatures were severe with a total of 13 days of —10° to —24° and 21 days of 0° or below.

The tree and fruit condition as of March 1, 1950, show very severe injury to fruit buds of peach, apricot, and cherry, and some injury to buds of plums and prunes. In some protected areas, the bud injury is less severe, especially on cherries. Pear buds and spurs show some injury but it is impossible to determine the extent at this time. Apple buds and wood growth on normal growing trees show little or no injury but some injury is noted on apple trees weakened from previous injury.

The wood of peaches and apricots and in some areas of cherries is severely injured and may result in complete killing of the trees.—F. L. Overley, Tree Fruit Experiment Station.

WESTERN WASHINGTON, Mar. 15

—Strawberries show possible overall reduction of 10 to 20 per cent in crop prospects for 1950. In Whatcom County, where strawberries are a very important crop, portions of strawberry fields that were swept bare of snow during blizzard conditions show extensive plant killing; otherwise, little damage.

Red raspberries—about 600 acres are grown in Whatcom County—probably will be reduced one-fourth to one-third below normal crop prospects. Blackberries were seriously damaged, probably 80 per cent crop loss. Boysenberries and other trailing varieties probably are heavily damaged.

Sour cherries show some damage to flower buds but the crop prospects are believed to be good. Peaches show severe damage to fruit buds.—C. D. Schwartz, Assoc. Hort., Puyallup.



United Air Lines
FROM THE RIO GRANDE TO LA GUARDIA FIELD. This first shipment of Texas strawberries ever flown to New York was picked this winter in the Rio Grande Valley.

OREGON, Mar. 17—It is still too early to measure accurately the extent of winter damage to various tree fruits in the Hood River area. Minimum temperatures ranged from —21° to —27° in the district. Sub-zero conditions prevailed for approximately a week. Fortunately, a very deep blanket of snow prevailed at the time, which protected trunks and crotches of trees. The thawing out period was favorable in that little sunshine occurred that would have resulted in extensive sunscalding and bark-lifting.

It can be stated definitely that the peach crop has been destroyed. Young trees appear to be severely injured. This crop, however, is of minor importance in the district. Based upon cuttings brought into the laboratory in order to force bloom, it is evident that greatest bud injury has occurred with cherry and Bartlett pear. Anjou pear shows less damage at this time. Apple buds show little or no damage.

Evaluation of the 1950 crop cannot be made with any degree of accuracy until the bloom period is past.—Leroy Childs, Supt., Hood River Exp. Sta.

There has been no winter injury to any of our fruit crops in the Rogue River Valley. We had temperatures down close to zero but apparently conditions were favorable because as yet we have been unable to find any bud or trunk injury.—C. B. Cordy, County Ext. Agent, Medford.

GEORGIA, Mar. 16—Barring any heavy freezes, Georgia should have a fair peach crop. In the Fort Valley section, Hiley are a day past full bloom and Elberta are showing pink with full bloom expected in a week or 10 days depending on the temperature. Growers have been advised not to blossom thin because of a possibility of a heavy drop. There are ample blooms left to set a good crop.

In the middle Georgia peach section, Elberta have been in bloom nearly three weeks. Continual low temperatures have greatly held back flower development. In spite of two low temperatures of 23° F. with a resultant killing of some blossoms, there are still enough left to set a crop even in the most advanced orchards.

The blossoms of the new Southland variety developed by Dr. John A. Weinberger at Fort Valley are apparently most resistant to cold even in full bloom. While varieties like Elberta are severely injured, the Southland comes through with minor injury.—Earl F. Savage, Experiment.

SOUTH CAROLINA, Mar. 18—Present prospects are for about an 80 per cent peach crop despite numerous periods of low temperature. Since mid-January every period of low temperature has reduced the number of fruit blossoms but a fair amount of most varieties remains. Particularly on heavily planted Elbertas we had one of the heaviest bud sets on record. Only Late Elberta and Jubilee suffered seriously. Average state of full bloom in Piedmont, S. C., March 17-19; in Central South Carolina, March 10-12. Full bloom in Piedmont expected March 20-22.—Roy J. Ferree, Sec'y, Clemson.
(Continued on page 43)



Year after year—the name VIGORO* has meant more and more to Fruit Growers!

NOW!
It's VIGORO for Commercial Growers!

... a special formula created to bring bigger yields of better quality fruit crops.

Vigoro for Commercial Growers, like famous Vigoro, is the result of years of study and research. It supplies special and ample amounts of all the vital food elements fruit trees must get from the soil to be healthy and produce larger yields of firmer, tastier fruit.

We invite your requests for further information about this new product. Drop us a card and we'll gladly supply the facts without any obligation.

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is the trade-mark for Swift & Company's complete, balanced plant food.



MARKETING

Why do housewives buy fruit? A partial answer to the question was revealed in a survey recently completed in Kentucky under the Research and Marketing Act. Households in urban and rural districts indicated that taste was the most important reason why they used oranges and grapefruit. It was found that practically every family of the thousand surveyed use some citrus fruit.

Housewives indicated that the health qualities of citrus were important, although many were unable to name the special food values contained in citrus.

Marketing costs. A study recently completed by State of Washington and USDA economists showed Washington apple growers received about 26 cents out of each dollar spent by Chicago consumers during the 1947-48 season. The chart below shows where the marketing charges took place. From the \$1.36 received by growers were paid costs of production and marketing as well as cost of handling apples to the packing plant. Shipping point charges totaled \$1.21, which included 46 cents for packing, 38 cents for box and lid, 21 cents for warehousing and storage, 13 cents for handling and selling, and 3 cents miscellaneous.

What can growers do to reduce the high costs of marketing? Shipping only well-graded, high-quality fruit to market will reduce spoilage losses and help to decrease the cost of wholesaling and retailing.

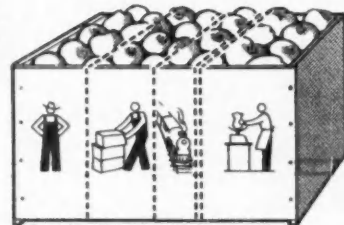
What is a Bosc? The relative obscurity of pears in the minds of consumers was strikingly demonstrated by a man-on-the-street recognition quiz conducted in New York several years ago. Of the first 1,000 pedestrians quizzed as to the meaning of the word "Bosc," over 900 thought it was a German soldier, 75 or more had no answer, three or four thought it was a type of processed milk, and only one recognized it as a prominent western pear variety!

Fruit prices. The bumper deciduous fruit crops of 1949 brought growers a seasonal average price below that received for the short crops in 1948. Preliminary USDA figures indicate that 1949's commercial crop of apples brought an average per bushel price of \$1.45 compared with \$2.23 the preceding year. Peaches averaged \$1.53 per bushel in 1949 as compared with \$2.05 in 1948, while the average of \$1.19 for pears compares with \$2.53 in 1948. Cherries returned \$147 per ton for the sweets in 1949 and \$276 in 1948, but the smaller 1949 crop of reds brought \$188 as compared with \$184 per ton the previous year. Grapes averaged \$35.10 per ton in 1949 and \$39.50 in 1948. In citrus, oranges, including tangerines, averaged \$1.56 per box in 1949 and \$1.70 in 1948; lemons, \$2.80 as compared with \$4.18. The very short crop of grapefruit in 1949 returned an average per box price to growers of \$1.64 as compared with 1948's price of 80 cents. Limes at \$3.50 in 1949 compares with \$3.14 per box in 1948.

Delicious Apples IN CHICAGO FROM WASHINGTON STATE

Costs Paid by Consumers

1947-48 SEASON
PER BOX
RETAIL SALES PRICE \$5.13



PER DOLLAR to Farmer

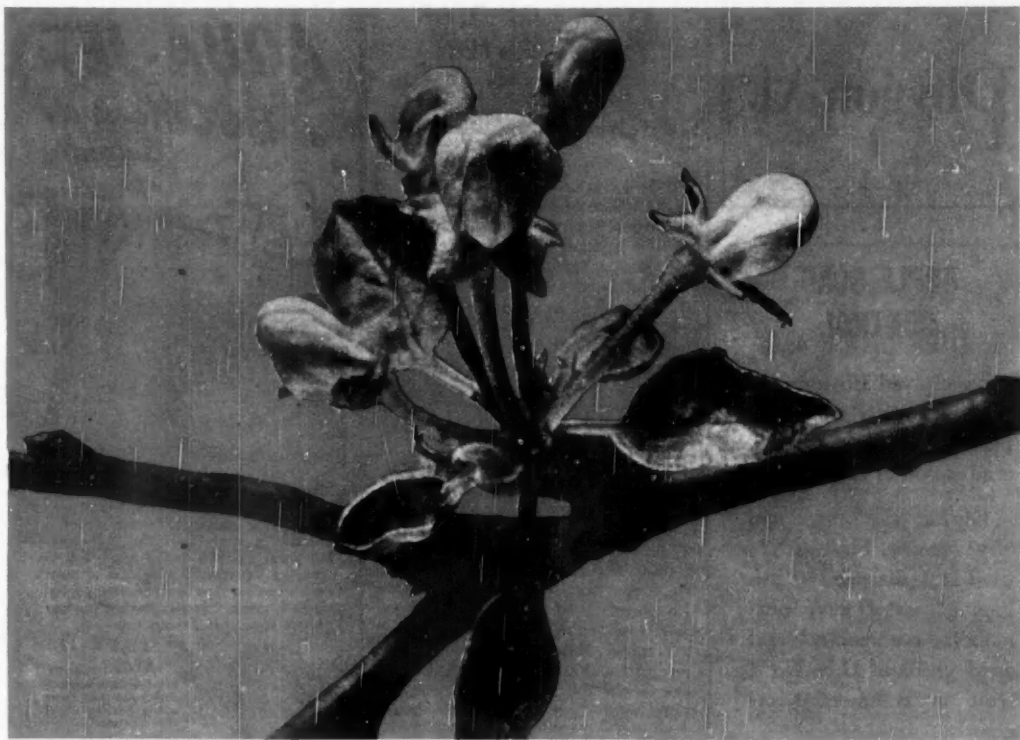
26¢

to Marketing System

74¢

\$1.36 \$1.21 73¢ 9¢ \$1.74
↑ ↑ ↑ ↑
SHIPPING AUCTION
FARMER FREIGHT WHOLESALER & RETAILER

USDA



Young Leaves Need Extra Protection

Tender, young leaves are "tea" for rosy aphids. Newly-hatched aphids congregate on young leaves and shoots and do serious damage, unless they are controlled. Watch carefully. At the first sign of aphids, spray with reliable, dependable Black Leaf 40.

It's a good idea to keep Black Leaf 40 on hand throughout the season, for fast, efficient protection against aphids, leafhoppers, apple redbug, most thrips, four-lined leaf bug, pear psylla, codling moth, bud-moth, pear midge, leaf-miners, mealy bugs, pecan phyloxera, pecan nut casebearer, and similar insects.

Black Leaf 40 kills these pests two ways—by contact and by fumes—quickly and economically, and insects controlled by this method do not develop resistant strains.

Black Leaf 40 does not destroy beneficial insects such as lady bird beetles and their larvae, aphid lion, syrphid fly, chalcid wasp, orius bug, epyris wasp, braconid wasp, various egg parasites, and numerous other friendly insects that attack your insect enemies. Black Leaf 40 also spares bees—the pollinizers.

Black Leaf 40 is non-caustic and does not injure foliage or fruit. It leaves no objectionable residue...

necessitates no washing of fruits. Black Leaf 40 is compatible with all standard spray materials, ideally suited for use in combination sprays.

Companion Product: *Black Leaf 155*—the "fixed" nicotine insecticide that provides non-caustic protection against codling moths, leafhoppers, leaf-miners, and summer aphids, without leaving undesirable residue.

Tobacco By-Products & Chemical Corporation • Richmond, Virginia



Phygon-XL

APPLE SCAB CONTROL

An improved Phygon formulation with controlled particle size for control and eradication of Apple Scab.

During the 1948 and 1949 seasons, Phygon-XL, used at 1/2 lb. per 100 gallons of water gave outstanding scab control, and good yields of U.S. No. 1 fruit in commercial orchards.

Phygon-XL is compatible with Lead Arsenate, DDT, Chlordane and Rotenone wettable powders.

PHYGON-XL ALSO CONTROLS

Blossom Blight of Peaches
Brown Rot of Peaches
Cherry Leaf Spot
Coryneum Blight
Peach Leaf Curl



**UNITED STATES
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STATUS OF OFAR IS BRIGHTER

By LARSTON D. FARRAR
Washington, D.C.

THE THREAT to the existence of the Office of Foreign Agricultural Relations, perhaps the least costly of all Uncle Sam's many bureaus today, seems to have been dissipated by intelligent effort on the part of all interested, including fruit representatives interested in keeping alive every export possibility.

Stanley Andrews, the colorful director of OFAR, flew home from Burma in early March to present the case for his agency to the House Committee on Agriculture, of which Representative Harold D. Cooley (D-N.C.) is chairman.

Upshot of the hearings was that Congressman Cooley pledged his committee's co-operation in seeing to it that OFAR be expanded and that the Department of State be shown the necessity of working ever more closely with the agricultural agency.

Truman Nold, executive director here of the National Apple Institute, was on the job behind the scenes attempting to get congressmen interested in fruit to contact fellow legislators who were on the agricultural committee.

Probable Recess in Hearings

The spray residue tolerance hearings are still going on here, under the aegis of the U. S. Food and Drug Administration, but some attempts are being made by fruit and vegetable interests to obtain a "recess" so that the latter part of the hearings can be conducted on a more logical basis.

Thus far, some 500 exhibits have been placed in the record. The vast majority of these have been designed to show the necessity for use of pesticides in the fruit and vegetable-growing industries.

The second phase of the hearings—from April 1 on, roughly—will revolve around the question of which pesticides have hazardous properties in the residue form. The \$64 question to be answered, on the basis of all this testimony, is: How toxic is the residue of a given chemical at a given time?

Representatives of the deciduous fruit industry here point out the utter lack of definitive, provable research results in this field. They believe that it would be wise for the FDA to call a "recess" to the hearings along about April 1 so that the

(Continued on page 22)

AQUA-JET

the **BOOM** with the
Butterfly Pattern



unretouched photograph

The HURST AQUA-JET BOOM offers an entirely new and revolutionary way of spraying orchards. It cuts costs all around... uses less labor... wastes less spray... and does a better job of spraying. Its speed equals that of most fan or blower type sprayers costing ten times as much. Can be attached to your present sprayer in 2 hours time.



"In all the world
no other spray nozzle like Aqua-Jet"

The Aqua-Jet Nozzle utilizes the full power of the pump for spraying. No internal choking or pressure losses. Twin impinging jets meet outside the nozzle to develop a far-reaching pattern of mist-like particle size. Impingement angle of jets adjustable; each nozzle and boom arm adjustable to limitless pattern arrangements on 50° (deg. arc) swivels. Boom fits any sprayer having widths of 30" to 50". Shipped complete, ready to install including mounting brackets, hydraulic harness to tractor seat and hydraulic control valve. Shipping Weight 146 lbs., price (f.o.b. San Jose) \$285.



3 WAY TRACTOR SEAT... HYDRAULIC CONTROL

Another exclusive Hurst development. Instantly operates the Aqua-Jet Boom 3-ways; off, on, or either side on.

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Sprayers**

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AMERICAN FRUIT GROWER

Irrigation News

WEATHER:

Make your own!

FROM ALUMINUM COMPANY OF AMERICA



VOL. 1 NO. 2

FRUIT EDITION • APRIL, 1950



Portable sprinkler system irrigating raspberries.

"Big Gun" sprinkler used for overtree irrigation.

Take a "Rain Check" on those April Showers!

The first thing you'll need for successful sprinkler irrigation is an adequate, dependable, nearby source of satisfactory water. Usually natural streams or lakes will do. But sometimes they dry up during prolonged droughts. So many farmers have built 3 to 5-acre artificial ponds on their land to "save" spring rains. With your own reservoir, you're pretty sure to have plenty of water to irrigate crops during the dry summer months.

BONUS BENEFITS FROM SPRINKLER IRRIGATION

The supplemental water you give your crops with a portable aluminum sprinkler system does more than promote growth. Applied at the proper time and in the right amounts, it improves the size and flavor of tree fruits, increases the nutrients in pasture grasses, benefits the quality and salability of vegetables and berries. Water should be used to keep crops growing rapidly—not to resurrect them after they start to dry up.

PICK
THE PIPE
THAT'S
PORTABLE!



LIGHTWEIGHT, LONG-LASTING

ALCOA

ALUMINUM IRRIGATION PIPE

Aluminum Pipe Easy to Move Keeps Labor Costs Down

Moving your portable sprinkler irrigation system from one setting to another is a simple chore when it's equipped with Alcoa aluminum pipe. One man can carry two—or even more—sections at a time, because aluminum pipe weighs only about $\frac{1}{5}$ as much as steel. Sections most commonly used are 20 to 30 ft. in length and 2 to 6 in. in diameter. Because of the light weight of aluminum, pipe diameters up to 8 inches are entirely practical. Quick-latching flexible couplings, fitted to the ends of pipe sections, make it easy to join or disconnect them—allow pipe lines to conform to sloping or rolling ground.



Sprinklings

Since Alcoa aluminum pipe is so smooth inside, water flows through it with little resistance—requires less pumping power.

For overtree irrigation, sprinklers are mounted on aluminum risers as high as 20 ft.

Alcoa aluminum pipe is made of alloy 63S-T6, a tough, heat-tempered metal designed to stand up under severe usage.

Michigan Growers Get More and Better Fruit with Portable Sprinkler Irrigation

Up in Michigan, more and more growers are finding how well it pays to supplement nature's rainfall with sprinkler irrigation of berries and tree fruits. They not only get larger yields and better quality fruit—they get their products to market earlier, when prices are high.

In Van Buren County, a large grower has a portable sprinkler system that can irrigate 400 acres. In the summer of 1948, he was mighty glad he had it. He watered 15 acres of strawberries 4 times ahead of picking, 3 times during picking. Result—his irrigated yield was 428 crates per acre, compared to only 275 crates per acre unirrigated. He uses sprinkler irrigation on raspberries, too. Water comes from three wells, is distributed through over 7,000 feet of portable pipe.

The manager of a big farm in Allegan County stresses higher fruit quality as the big advantage of sprinkler irrigation. Apples and peaches are larger in irrigated portions of orchards, he reports. High yield and high quality may be even more important, he feels, should fruit prices suffer a drop. Water for his orchards is lifted 95 ft. from Lake Michigan.

Free Booklet Answers Many Questions About Irrigation

Would you like to know more about portable sprinkler irrigation systems? How they are making farms more profitable? What equipment is needed? How to install a system? How much a system costs? Something about sources of water?



These and many other questions are answered in this 32-page book, "Portable Sprinkler Pipelines to Profit." It's free... mail the coupon today.

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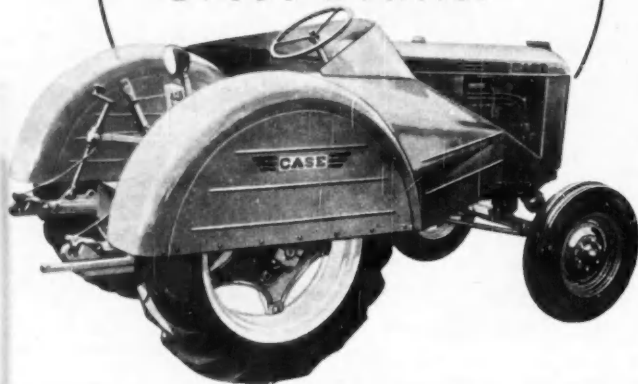
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See this
LOW-COST
Grove Tractor



Find Out the Ways You Save With

- **NEW EAGLE HITCH**
- **NEW LATCH-ON IMPLEMENTS**
- **NEW HYDRAULIC CONTROL**

Now, without getting off the seat of this improved "VAO" Case tractor, you can put on rear-mounted implements in a minute. Its new Eagle Hitch is the easiest 3-point hook-up you ever saw. It works on a new principle which keeps mounted plows working at uniform depth in hard soil and uneven ground.

Built right into Eagle Hitch is the brand-new hydraulic control. Independent of clutch and gears, it works any time, moving or standing—lifts, lowers and adjusts implements at touch of a little lever.

"Latch-On" tool bar is foundation for many implements, takes teeth, sweeps, shovels—stiff or spring shanks. There are several types of Latch-On plows, and a 7-foot mower that lifts clear for turns.



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OFAR STATUS

(Continued from page 20)

results of the first three months of testimony could be studied and collated. At the same time, these representatives would like to see a broadening hunt for more adequate evidence on which to base answers to the \$64 question.

Unless something "startling" does develop, fruit growers need not be worried about the injection of any emergency tolerance residue limitations this year, at least.

Magnuson Amendment

The so-called "Magnuson Amendment," which would give the Secretary of Agriculture the authority to make a "finding" in case imports of agricultural products into the U. S. were disturbing the market situation of surplus crops grown in this country, has a 50-50 chance of passage, in the opinion of shrewd capital observers.

The amendment, attached to the Commodity Credit Corporation legislation in the Senate, was introduced by Senator Warren G. Magnuson (D-Wash.) and is expected to obtain the support of most "high tariff" members of the Senate, plus many farm State senators who normally vote with the administration. The House of Representatives may prove to be the amendment's nemesis.

Under present law the U. S. Tariff Commission has authority to make a "report" to the President on such imports if he requests the commission to do so. It isn't very likely that Mr. Truman would make such a request since he first would have to be prodded by the Department of State, which usually takes a dim view of any move to discourage imports into America.

Everybody in the USDA favors the amendment, although none will say so publicly. If it were passed, imports of fruits from other nations, as long as there are surpluses of such fruits in this country, likely could be stopped, if the Secretary of Agriculture could get the President's co-operation, which would be far more likely if the Magnuson Amendment were passed than it is now.

ECA Future

Economic Co-operation Administration officials are getting set for a pretty deep slash in their funds for the next fiscal year—maybe as much as one-third being whacked off their request of \$2.8 billion. If the slash comes, it will virtually negate any hopes the fruit industry may have for purchases such as those made by Great Britain several months ago.



Six-Year Orchard Test Shows Cumulative Benefits of FERMATE On Fruit Yield and Quality

In a New York State apple orchard, six years of tests show that "Fermate" fungicide improved the yield of picked, scab-free fruit by 74% and increased the total yield 59%, as compared to "mild" sulfurs.

This cumulative test over six years shows the exceptional value of this effective organic fungicide. "Fermate" controls scab without injury to the foliage, and in applications at the time of blossom it improves fruit set over that permitted by harsher fungicides. Even in hot weather, "Fermate" does not produce leaf burn. As a result, the foliage grows to its fullest vigor and manufactures more food to grow a bigger crop of larger, finer apples.



On apples and pears, "Fermate" has the additional advantages of controlling black rot, sooty blotch and mildew, as well as cedar-apple rust. It is also exceptionally effective, as well as safe for control of brown rot of peaches, plums and cherries, grape

black rot, raspberry anthracnose and cranberry fruit rots. Many experiment stations recommend "Fermate" as a safe fungicide to use on sweet cherries for control of leaf spot and brown rot. Both sweet and sour cherries are sensitive to certain other fungicides in early spring, but "Fermate" provides excellent leaf spot control without danger of this cold weather damage.



For peaches, Du Pont "Zerlate" organic fungicide is the recommended control for brown rot, since its light-colored residue does not show on the fruit, yet protects it right through harvest and shipping.

Spray mixtures are easy to make with "Fermate." It is compatible with almost all other fruit spray materials. Since it can be used with summer oil, it fits well into the pear spray program for psylla control.



DU PONT CHEMICALS FOR THE FARM INCLUDE:

Fungicides: PARZATE* (Liquid and Dry), FERMATE*, ZERLATE*, Copper-A (Fixed Copper), SULFORON* and SULFORON-X Wettable Sulfurs... Insecticides: DEENATE* DDT, MARLATE* Methoxychlor, LEXONE* Benzene Hexachloride, KRENITE* Dinitro Spray, EPN 300 Insecticide, Calcium Arsenate, Lead Arsenate... Weed and Brush Killers: ANIMATE*, 2,4-D, TCA and 2,4,5-T... Also: Du Pont Cotton Dusts, *Du Pont Spreader Sticker, FARMONE* Fruit Drop Inhibitor, and many others. *Reg. U. S. Pat. Off.

On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

NEW CONTROL FOR MITES:

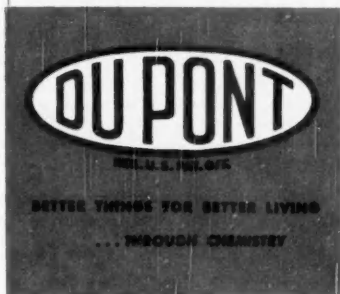


EPN 300 INSECTICIDE

Now fruit growers can clean up mites with fewer spray applications, by using Du Pont EPN 300 Insecticide. Du Pont EPN 300 Insecticide controls many kinds of mites: European red mite, two-spotted mite, Pacific mite, Willamette mite and clover mite. It is excellent for use on apples, pears, plums and cherries. EPN 300 Insecticide is compatible with other commonly used pest-control chemicals including "Fermate," "Deenate" DDT and "Marlate" 50 Methoxychlor insecticide. It is formulated as a wettable powder for ready use.

EPN 300 is one of the least toxic of the organic phosphorus insecticides in common use, but every user must take suitable precautions as indicated on the label.

• To obtain "Fermate," EPN 300 Insecticide and other Du Pont agricultural chemicals, see your local dealer. Also ask him for free leaflets that give further details, or write to Du Pont, Grasselli Chemicals Dept., Wilmington 98, Delaware.



Before You Buy Your Sprays & Dusts...

Consider

**QUALITY
EFFECTIVENESS
DEPENDABILITY**

You Always Get all 3 in



Chipman sprays and dusts are made under the most careful chemical control and supervision. Highest *quality* is assured by check analysis of each raw material and finished product. Thorough field tests prove the *effectiveness* of all new products... and their *dependability* is backed by more than thirty-seven years' experience in manufacturing chemicals.

This season, use Chipman brand for fruit protection that pays off in bigger, better yields.

CHIPMAN HI-TEST LEAD ARSENATE

The lead with the unequalled guaranteed analysis! Contains 21% arsenic as metallic and 0.35% or less water soluble arsenic... a real assurance of extra killing power and greater safety... at no additional cost.

COPPER HYDRO:

Ideal neutral copper fungicide... excellent for control of cherry leaf spot, apple scab, other copper-controlled diseases. Easy and quick to mix. Does not clog nozzles or screens. Combines with insecticides.



Use **CHIPMAN Brand!**

DDT SPRAY POWDER
DDT DUSTS
PARATHION SPRAY POWDER
BERAKO (Rotenone) SPRAY
CUBOR (Rotenone) DUSTS
BENZAHEX SPRAY POWDER
(Benzene Hexachloride)

COPPER HYDRO BORDO
WETTABLE SULFUR
DRY LIME SULFUR
FIRE BRIGHT DUST

ATLACIDE—Weed Killer
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2,4-D Weed Killers
2,4,5-T—Brush Killer

FRUIT SET—Harvest Spray

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BOOKLET

CHIPMAN CHEMICAL COMPANY

DEPT. K, BOUND BROOK, NEW JERSEY

Manufacturers of Weed Killers Since 1912... of Insecticides Since 1921

IN THE NEWS

DEAN STANLEY



Dean Stanley

Dean Stanley, president and general manager of the Stanley Fruit Company of Phoenix, Ariz., has been appointed as a new member of the Agricultural Research Policy Committee to replace C. W. Kitchen who has resigned.

Mr. Stanley has been active in farm organizations and food and trade association work for approximately 30 years. Since 1918 he has engaged in general farming in the irrigated areas of Arizona, New Mexico, Colorado, and the Imperial Valley of California. Mr. Stanley has been chairman of the Vegetable Advisory Committee, a member of the board of directors and past president of the Western Growers Association, and has served as a member and chairman of the Arizona Commission of Agriculture and Horticulture.

ERNEST HART



Ernest Hart

At a recent meeting of the board of directors of the Food Machinery and Chemical Corp., Ernest Hart, vice president, was elected to the board.

Associated with Food Machinery for 34 years, Mr. Hart is in charge of FMC's Niagara Chemical Division at Middleport, N. Y.

A well known figure in the field of agricultural chemicals, Mr. Hart was recently elected president of the National Agricultural Chemicals Association.

WALTER S. HOUGH



W. S. Hough

A manuscript to be titled "Spraying, Dusting, and Fumigating of Plants" has recently been completed by Dr. Walter S. Hough of the Winchester Research Laboratory. To be published by the Macmillan Company, this will be a reference work dealing with the control of fungi, insects, and various other pests. Other subjects will include spraying and dusting machines, pesticides, and fumigation.

Dr. Hough started the Winchester Research Laboratory, a division of the Virginia Agricultural Experiment Station, in 1921 and has been doing research with insect control since that time.

GEORGE E. MATTUS



G. E. Mattus

New associate professor of horticulture at the Virginia Polytechnic Institute is Dr. George E. Mattus. He is directing research on fruit and vegetable harvesting, handling, transportation, and storage.

Dr. Mattus received his B.S. and Ph.D. degrees from Cornell University where he had experience with storage research. He also held a teaching assistantship at the University of California where he conducted experiments in harvesting and transportation of fruit.

AMERICAN FRUIT GROWER

**in Any
Crop...**



**on Any
Contour...**



**for Any
Condition...**



an **OLIVER** *Crawler is better!*

When spraying schedules must be met in spite of mud... when seeding steep slopes... when soil is sandy or sticky or soft—that's when an OLIVER Crawler pays off!

OLIVER Crawlers are built especially for the diversified farm in sizes and models to handle a multitude of ordinary and odd jobs... from land clearing to caring for cultivated crops. The versatile Model "HG", for example, is available in four tread widths—31, 42, 60 and 68 inches—and with ample clearance for work-

ing in row crops. And, the mighty Model "D" has plenty of power to hustle along multiple implement hook-ups in large scale operations.

Ask your neighborhood OLIVER dealer to help you pick the power that meets your requirements best. Also available is a full line of soil-saving machines that fit OLIVER Crawlers—loaders, 'dozers, terracers, etc.—plus a wide variety of mounted and trailer-type tools. The OLIVER Corporation, 400 West Madison Street, Chicago 6, Illinois.



OLIVER

"FINEST IN FARM MACHINERY"



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Please send me folder describing OLIVER Crawler
Tractors, plus allied equipment and mounted
implements.

Name.....
Post Office.....
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P35-4

"SPRAY-FERTILIZE" YOUR APPLE TREES



with Barrett Standard Urea Spray Fertilizer

Apple leaves absorb urea nitrogen applied in a spray. Research experiments, conducted at Cornell University and elsewhere, indicate that apple trees spray-fertilized with urea nitrogen will produce yields comparable to those resulting from soil applications of nitrogen.

Spray urea nitrogen applications save time and labor and aid in controlling nitrogen fertility balance in your apple orchard. Urea nitrogen, applied in a spray, goes to work immedi-

ately—without wait for rain.

Apply three or four applications of Barrett Standard Urea Spray Fertilizer in conjunction with your regular spray program—in the calyx and first and second cover sprays. If four applications are made, it is satisfactory to begin with the pink spray, then follow with the calyx and cover sprays. Use five pounds of Barrett Standard Urea Spray Fertilizer per 100 gallons of spray solution. This Spray Fertilizer is compatible with the commonly-used insecticides and fungicides, including sulphur, lead and "Fermate."



Standard Urea Spray Fertilizer

- **Guaranteed** to contain 46% nitrogen—all in the urea form.
- **A crystalline compound** completely soluble in water.
- **Packed** in easy-to-handle 50-pound multi-wall paper bags.
- **Prepared specifically** for use in foliar fertilizer sprays. Especially suited for use in conjunction with regular apple spray programs. May also be used to "spray-fertilize" other crops, such as grass, small grain, tobacco, potatoes, etc.

Barrett Standard Urea Spray Fertilizer may be obtained through your local fertilizer dealer.



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NUT GROWERS NEWS

Pecan Improvement

FULTON COUNTY, Kentucky, is typical of a considerable range of territory along the central Mississippi River and its adjacent tributaries where native pecan trees grow wild and often produce abundantly in the better drained soils of a land which frequently is flooded for short periods. Some of the larger trees in the county have yielded from 300 to 700 pounds of pecans in the shell.

These seedling nuts are cracked by a plant at Hickman, Ky., which draws also on the native crop from portions of Illinois, Missouri, Tennessee, and Arkansas, to turn out about a million pounds of shelled kernels during an eight-month period each year.

Top-Working Program

"Realizing that this industry is here to stay, and that many farmers of that district have numerous young seedling pecans growing on their farms, the Kentucky Agricultural Extension Service has launched a program of top-working these seedlings with some of the known, improved varieties."

Thus Extension Horticulturist W. W. Magill reported on the Kentucky pecan improvement at the 39th annual convention of the Northern Nut Growers Association. "The beginning of this top-grafting program was in late April, 1948, when some 200 trees were top-worked. We find that over 90 per cent of the five to 10-year-old trees that were grafted have developed from two to eight feet of new growth from the graft, in the first year.

Hardy Varieties Selected

"The best information available from pecan authorities was that this southwestern Kentucky area approaches the northern limit of successful production of southern pecans, and that our success with pecans here could best be assured by top-working to the hardy varieties of more northern origin, such as Niblack, Major, Greenriver, Giles, Goforth, and the like."

Mr. Magill is of the opinion that other varieties now growing as seedlings in the Reelfoot Lake area of Kentucky and Tennessee, or across the river in Missouri, may prove equally as good if not better than the presently named varieties. — J. C. McDaniel, Secretary, Northern Nut Growers' Association, c/o Tenn. Dept. Agr., Nashville 3, Tenn.



The Styleline De Luxe 2-Door Sedan

Built better for your kind of driving!

This rugged dependable Chevrolet for '50 really earns its keep!

Here's the car that has everything you want—that's right for you seven days each week!

Around the farm, you'll find that Chevrolet has outstanding power and stamina. Work this rugged beauty round the clock every day—your Chevrolet can take it!

And for all-road pleasure, there's no car in the low-price field that matches Chevrolet's riding and driving ease. It's designed from the wide tread tires on up to carry you and your family more miles . . . in more comfort . . . for more years.

Chevrolet for '50 is as handsome as it is powerful and sturdy, too. Every one of the fourteen new Styleline and Fleetline body-types has a distinctively practical styling that is beautiful for keeps. They'll take the most rugged going—and still stay so good looking that you'll be proud of your Chevrolet for years!

Add up these exclusive Chevrolet advantages—compare Chevrolet's price. You can't help . . . but agree that Chevrolet offers more value—that Chevrolet again is first and finest at lowest cost! See your Chevrolet dealer today.



Whether you choose the new 105-h.p. Valve-in-Head engine with Powerglide automatic transmission,* or the rugged standard Valve-in-Head engine with Synchro-Mesh transmission, you can trust your Chevrolet to be ready for any driving assignment . . . in any kind of weather.



CHEVROLET MOTOR DIVISION, General Motors Corporation, DETROIT 2, MICHIGAN

FIRST . . . and Finest . . . at Lowest Cost!



Longest, heaviest car in its field. Chevrolet for '50 is really solidly built—even the muffled click as its doors swing shut tells you of Chevrolet's big car construction. And it's a great feeling to know that you have those proved Certi-Safe hydraulic brakes with rivetless linings.



Space where you need it when you need it—that's the roomy new Chevrolet for '50! Your passengers can really relax and stretch on those generous "five-foot" seats—spacious comfort that leaves you fresh at the end of a long trip. You'll like that giant-size trunk, too.



Unisteel Body by Fisher, Center-Point Steering with Unitized Knee-Action ride, airplane-type shock absorbers, Panoramic Visibility—these are just a few of the big car features that combine to make Chevrolet for '50 a better-riding, better-handling, safer car than ever!



Good looks that last! New Style-Star Bodies by Fisher in sparkling color harmonies and new two-tone interiors make Chevrolet a durable beauty inside and out. And just wait till you experience the effortless, no-clutch handling of the sensational new Powerglide automatic transmission!*

*Combination of Powerglide automatic transmission and 105-h.p. engine optional on De Luxe models at extra cost

AMERICA'S BEST SELLER . . . AMERICA'S BEST BUY

ACT NOW

TO

PREVENT

THIS

The red-banded leaf roller destroys fruit and foliage. The *right* insecticide applied at the *right* time will prevent these crop losses.

Experience of thousands of orchardists shows that RHOthane is the right insecticide for complete control of this pest.

Timing of RHOthane sprays varies with the locality. To control the larvae of first generation leaf rollers, it is suggested that one or two sprays be applied in the period between "petal fall" and ten days following. Your County Agent will be glad to give you more specific suggestions suited to your local conditions.

FREE . . . This folder helps you identify the red-banded leaf roller and other insect enemies. It also gives you step-by-step suggestions for the control of these pests. Send a postcard for your copy to Rohm & Haas Company, Dept. B, Philadelphia 5, Pa.



You're **RIGHT**
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CHEMICALS  FOR INDUSTRY

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GLYOXALIDINE FOR CHERRY LEAF SPOT

By H. W. THURSTON, JR.
The Pennsylvania State College

IN NOVEMBER, 1946, AMERICAN FRUIT GROWER announced to orchardists a new and promising fungicide for use on cherries. This fungicide was an organic chemical known as glyoxalidine or, more simply, Compound 341. It was the result of research by chemists and plant pathologists of the Carbide and Carbon Chemicals Division, Union Carbide and Carbon Corporation, who at that time were comparative newcomers in the field of manufacturing agricultural chemicals.

While the cherry grower has numerous diseases and insect pests to fight, the leaf spot disease, and the early defoliation that so frequently accompanies it, undoubtedly remain the No. 1 problem.

In southern Pennsylvania, an outbreak of leaf spot can be counted on in any year that the early season rainfall is adequate for the spread of the fungus. Failure to control leaf spot in Pennsylvania in 1945 caused the loss of 25,000 trees, and an additional killing of buds, spurs, and whole branches on many thousands more.

Higher Yields

Dr. F. H. Lewis of the Pennsylvania Fruit Research Laboratory is authority for the following figures: In 1945, check trees in his spray plots were two-thirds defoliated by June 28 and completely defoliated before October 1. In the same plots, trees sprayed with glyoxalidine retained 99 per cent of their foliage on June 28, and 95 per cent on October 1.

In 1946, these plots were sprayed alike, yet those which had suffered severe defoliation in 1945 yielded only 36 pounds of cherries per tree in 1946, while those trees which retained their foliage in 1945 yielded 107 pounds of cherries per tree in 1946.

In addition to this great difference in yield, there was also a pronounced difference in grade. The 36-pound yield graded out 56 per cent No. 1 cherries and the 107-pound yield graded 79 per cent No. 1 cherries.

Glyoxalidine is not the only fungicide that will control leaf spot, but the evidence that it will give satisfactory control of this disease with a

AMERICAN FRUIT GROWER

minimum of injury to fruit and foliage, and that its use actually promotes higher yields and increases the health and vigor of the trees, is steadily accumulating. As a result of four years of testing in New York State, the conclusions (as yet unpublished) of W. D. Mills and J. D. Van Geluwe are that glyoxalidine has given consistent and outstanding control of cherry leaf spot.

A Protective Fungicide

It should be emphasized that glyoxalidine is a protective fungicide and not an eradicant. It can be expected to give its best control only when applications are properly timed on a preventative schedule. Where timing is poor, copper fungicides may give better control.

It has long been known that spray materials may affect the size of cherry fruit. The degree of the effect caused by various materials is itself variable from year to year, and also from one producing area to another. Unsprayed fruits are usually the largest, while copper-sprayed fruits are frequently reduced in size. Bordeaux mixture causing the greatest amount of dwarfing. Glyoxalidine has consistently caused little or no dwarfing of the fruit.

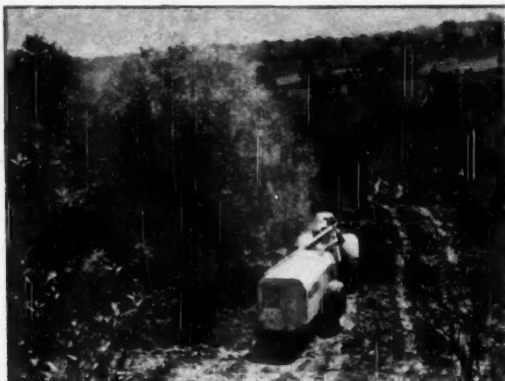
Solids Content

The relation between size of fruit and its sugar content is a matter which is currently receiving attention. Mills and Van Geluwe reported that, for 1949, fruits sprayed with glyoxalidine had the highest solids content of the various materials in their tests. Earlier work by Lewis indicated that copper-sprayed cherries had the highest solids content, but that the difference in total solids between copper-sprayed cherries and those sprayed with an organic fungicide such as glyoxalidine could be expected to be two per cent or less.



Protective fungicide being applied to cherries on Horn Farm, Sodas, N. Y., by J. D. Van Geluwe while Dr. W. D. Mills of N. Y. State Extension Service observes.

APRIL, 1950



The amazing new Hardie Orchard Mist Sprayer delivers the finely atomized concentrate spray on an air stream of 20,000 cu. ft. of air per minute traveling at 110 miles per hour. One man drives the tractor and sprays 100 to 300 trees in 40 minutes—with or against the wind, or in the rain.

HARDIE BRINGS TO ALL GROWERS THE ECONOMIES AND BENEFITS OF NEW TYPE SPRAY MACHINES



Cost of labor, time, spray material and the loss of fruit destroyed or damaged by pests are the outstanding barriers to profits. Meeting this challenge, Hardie Engineers have developed a new line of "one-man" sprayers that gives the grower the most advanced means of applying concentrate or dilute sprays by air stream, orchard booms, and improved hand guns.

Hardie builds two models of air-type Concentrate Sprayers providing the new one-man, one-tractor, high speed spray application in its most efficient and economical form. Hardie Orchard booms and other conversion devices provide the means of using conventional high pressure sprayers of adequate capacity for boom spraying with amazing speed and economy in the application of dilute sprays.

Hardie factories and Hardie dealers serve every part of the United States and the world with up-to-date, tested and proved sprayers and responsible service. Write for catalog and complete data to your nearest Hardie factory or ask the leading dealer in your area, who is almost certain to be a Hardie dealer.

The Hardie Mfg. Company

Hudson, Mich. Los Angeles 58, Calif. Portland 9, Oregon
Export Dept., Detroit 28, Mich.

Canadian Distributor, Clarence W. Lewis & Son Ltd., Grimsby, Ont.

Manufacturers of sprayers for orchard, field, animal pest, weed control and general farm spraying. Many models in high pressure line from 4 G.P.M. at 300 P.S.I. to 80 G.P.M. at 1000 P.S.I.





Magnetic "70"
CONCENTRATED
SULPHUR PASTE

1949 results prove that Magnetic "70" is still the "cream of the sulphur pastes."

Its creamy, free-flowing consistency permits it to be added direct to the spray tank by washing through a screen. It sticks; it sets up quickly even when only partially dry; and its extreme fineness (not more than 2 microns surface average diameter) gives foliage and fruit that extra protection needed during prolonged periods of wet weather.



Stauffer's finest dusting sulphur for scab and brown rot. With a particle size of not more than 5 microns surface average diameter, Magnetic "90" is extremely adhesive and gives a heavier coating on either wet or dry foliage.



A dry-wettable sulphur with a fineness of not more than 5 microns surface average diameter. Primarily intended for use as a spray on apple and peach in the early cover sprays, but also perfect for use as a dust in your new "sprayer-duster."

Big 3

OF SULPHURS
FOR
SCAB & BROWN
ROT CONTROL

PARATHION
Wettable and Dust
Concentrates

BHC
15% Gamma BHC
Wettable Concentrate

LINDANE
Wettable and Emulsifiable
Concentrates

DDT
50% Wettable and Dust
Concentrates

Stauffer CHEMICAL COMPANY

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NATIONWIDE FRUITS

● **Calmeria**, a highly productive, shipping, and storage grape for California, is a new development of the USDA. It is a seedling of Ohanez (Almeria), the well-known midwinter storage variety it is expected to replace.

The greenish-yellow fruit of Calmeria is larger and somewhat sweeter than Ohanez, and the texture is firm and the skin sufficiently tough to hold up well in shipping and storage.

Calmeria is recommended by the USDA for trial in vinifera grape areas where the Ohanez and Emperor varieties are now grown. It matures from late September to early October in the Fresno, Calif., area and requires at least 200 growing days between killing frosts.

● **Grape leaf injury** caused by overwintering leaf hopper adults can be prevented with one application of DDT before the grapes bloom. In tests conducted by the New York Experiment Station, one application of eight ounces of actual DDT in 100 gallons of a 2-4-100 Bordeaux mixture with a spreader gave adequate control for the entire season. Thorough application is necessary.

● **Where grapes are produced** in quantity, the fertility tests of the Erie County (Pa.) Field Research Laboratory will prove of interest.

Grape stems and grape pomace, also manure, when applied every third year to vineyard soil at the rate of six tons per acre, resulted in significant increases in grape production, the tests showed.

Stems are slightly superior to manure in increasing grape yields, the laboratory has found, whereas pomace has not proved to be quite so effective as either stems or manure.

A six-ton per acre application of stems contains about 60 to 70 pounds of nitrogen, 60 pounds of phosphoric acid, and 120 pounds of potassium oxide, according to the laboratory. A similar amount of pomace contains 50 to 60 pounds of nitrogen, 30 pounds of phosphoric acid, and 12 pounds of potassium oxide.

● **A new blackberry variety**—Olallie—has been released by the USDA and the Oregon Experiment Station for production in the West. Olallie is said to retain its bright black color and firm texture through canning and freezing. It is a vigorous-growing, trailing type, and produces high

yields of berries that are somewhat longer than Boysen and nearly as large. Flavor of the berries grown in California is said to be better than that of Boysen and in Oregon not as high in some seasons as Boysen. The variety is a cross between Black Logan and Young.

● **In areas where apple scab** is likely to be a problem, a thorough ground spray of the sodium salt of dinitro-ortho-cresol (Elgetol or Krenite) as the buds begin to swell, is recommended to reduce spore infection which may result from the overwintering fungus in the fallen leaves in the orchard. Plant scientists of the Wisconsin Experiment Station and the USDA recommend one-half gallon of the chemical to each 100 gallons of water and 400 gallons of the mixture to the acre.

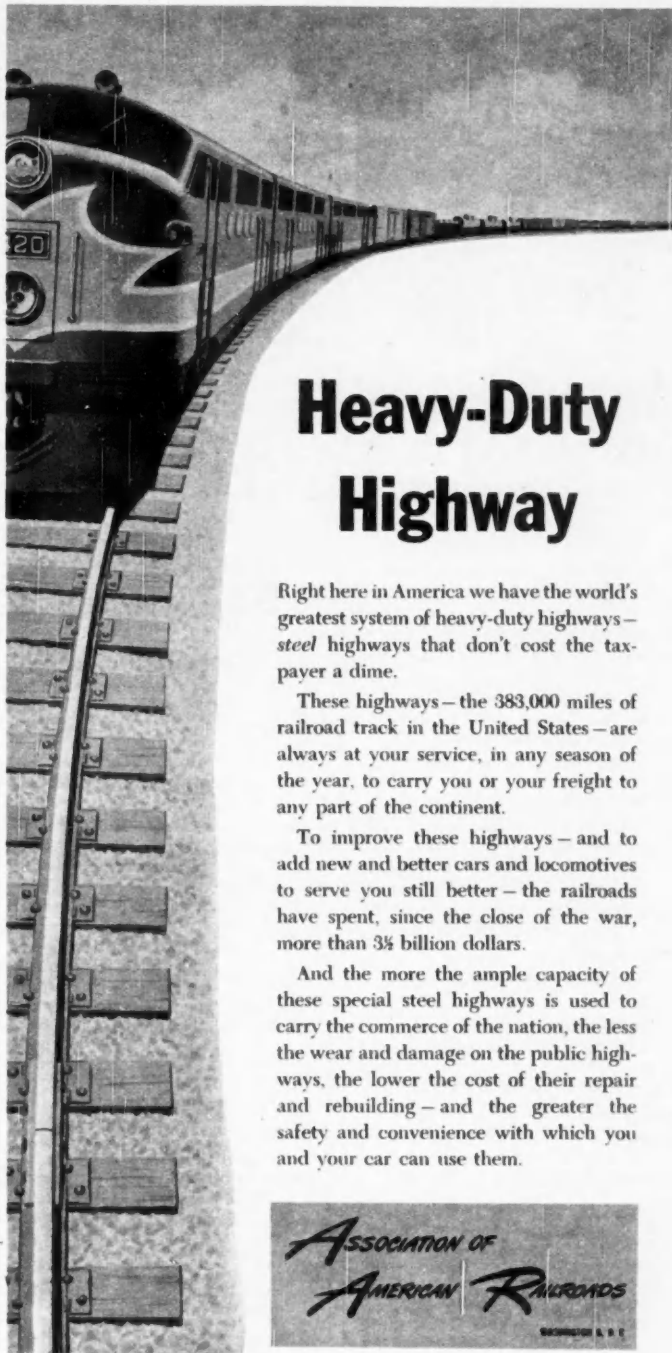
The ground spray will kill up to 95 per cent of the spores and eliminate 90 per cent of the infection on the young leaves and fruit, they state—provided it is applied under the trees, between the trees, and in fence rows and uncultivated boundaries of the orchard.

This spray should be followed by the regular tree sprays of wettable sulfur, lime sulfur, or Ferbam, applied according to State experiment station recommendations.

In New York experiments, spray applications of urea—a soluble form of nitrogen—on McIntosh trees not only maintained yields of fruit but reduced the amount of scab. The urea was used in the first three sprays following bloom—three, five, and eight pounds in 100 gallons of spray containing wettable sulfur and lead arsenate.

● **The Franklin variety** of apple—a cross between McIntosh and Delicious developed by the Ohio Experiment Station—is recommended by the station for limited commercial planting to extend the McIntosh season. In 1949 fruits of the new variety bore 17 days after McIntosh. They were large, well-colored, attractive, and of good dessert quality. The variety has some of the disadvantages of McIntosh, being susceptible to scab and bruising, and it scalds badly if left in cold storage until January. Trees will be available at nurseries in the fall of 1950.

● **A synthetic latex** used in liquid form at about 70° F. or room temperature holds promise of being an effective material for preserving scion wood. Scions dipped in Geon 31X are covered with a tight elastic film which is said to keep the wood in condition for grafting into the summer and when grafts are made, the scions need not be waxed.



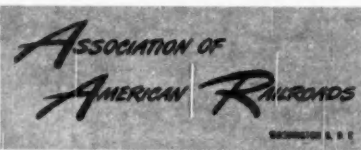
Heavy-Duty Highway

Right here in America we have the world's greatest system of heavy-duty highways—steel highways that don't cost the taxpayer a dime.

These highways—the 383,000 miles of railroad track in the United States—are always at your service, in any season of the year, to carry you or your freight to any part of the continent.

To improve these highways—and to add new and better cars and locomotives to serve you still better—the railroads have spent, since the close of the war, more than 3½ billion dollars.

And the more the ample capacity of these special steel highways is used to carry the commerce of the nation, the less the wear and damage on the public highways, the lower the cost of their repair and rebuilding—and the greater the safety and convenience with which you and your car can use them.





Puratized* AGRICULTURAL SPRAY

Pat. No. 2,423,262

Elimination of scab means a bigger crop, better fruit, more vigorous trees. Use Puratized Agricultural Spray to guard against infection and to inactivate scab after it starts.

The outstanding effectiveness of Puratized Agricultural Spray has been proven year after year by commercial growers everywhere.

This patented formulation is recognized by research authorities as a unique contribution for the control of scab and other plant diseases. Consult your local dealer or write today for further details.

INEXPENSIVE

One gallon makes 800 gallons of spray.

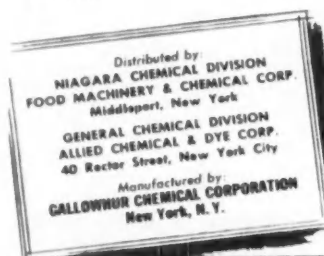
EASY TO USE

Instantly water soluble. Leaves no visible deposit. Can be applied with common insecticides and fungicides.

VERSATILE

Effective, too, for brown rot blossom blight of cherries and peaches, and certain other plant diseases.

*Trade Mark



A NEW STRAWBERRY

CCROSSING the Aroma and Blake—more strawberries has produced what many strawberry growers consider the perfect variety for Missouri. Named *Armore* by the originator, H. S. Swartout of the University of Missouri, the variety has been tested extensively in the important growing areas as Mo. No. 164.

The berries are large sized, bright cherry red in coloring, and firm for shipping to distant markets. Plants are strong and vigorous and are prolific producers of quality fruit that promises to make an important place for this new variety on the market.



The yields have been as much as 100 more crates per acre than the nearest competing varieties under identical conditions.

Fruits begin maturing a few days before Aroma, and the plants continue to produce after all the Aroma berries are harvested. In contrast to many varieties, the size remains uniformly large even for the last pickings. Experimental plots in Missouri and Kansas have produced 525 crates per acre. A substantial acreage of the variety is scheduled for planting in Missouri and neighboring States this spring from the plants that are currently available.—*Paul Stark Jr.*

SUCCESSFUL ORCHARDING

To answer your questions, American Fruit Grower is offering the following booklets, charts, and plans:

Successful Orchards—48-page illustrated booklet describing fruit varieties, planting, culture, etc.	\$.10
Successful Orchard Spraying—48-page booklet	.15
Rodent Control—32-page illustrated booklet	.10
Compatibility Chart for Insecticides and Fungicides	.10

BUILDING PLANS (FULL-SIZE)

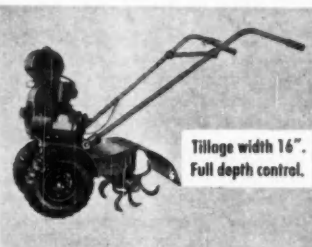
Roadside Market	.50
10,000-Bushel Apple Cold Storage	1.00
Tenant House	1.00

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Plans and Booklet Dept.

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It safely mulches close to nursery plantings

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AMERICAN FRUIT GROWER

BOOK REVIEWS

● **Evergreen Orchards** (\$6.00) *Lea & Febiger*, by William Henry Chandler. To supplement his *Deciduous Orchards* Dr. Chandler has now written about the evergreen fruit trees such as citrus, dates, olives, coconuts, etc. *Evergreen Orchards* deals with the evergreen tree and its fruit with a detailed discussion of the orchard environment and also includes individual chapters on the characteristics of each of the more important fruits.

In his preface Dr. Chandler states his purpose in writing this book when he says, "A study of these species should enrich the student's contact with horticultural scientists of the world, bring to his attention research reports by many interesting workers who now seem to be largely ignored in American teaching."

Dr. Chandler was selected as one of the three greatest living horticulturists by AMERICAN FRUIT GROWER in 1947, and his books are only one of his many contributions to the field of horticulture.

Orders for books on fruit growing and allied subjects may be sent to AMERICAN FRUIT GROWER, 1370 Ontario St., Cleveland 13, Ohio, with check or money order enclosed.

WHY READ A SPRAY DOPE LABEL

(Continued from page 16)

Dowspray Dormant. The use recommendation was two quarts in 100 gallons of water.

We talked with this grower in mid-summer. He said, "Say, Don! I got good control with DN-289. But, man, I can't afford to continue to use it!"

"I can't understand that," I said. "It calls for only two quarts. Two quarts is not too expensive—how come?"

"Two quarts?" he said. "Well, I'll be—I used two gallons!"

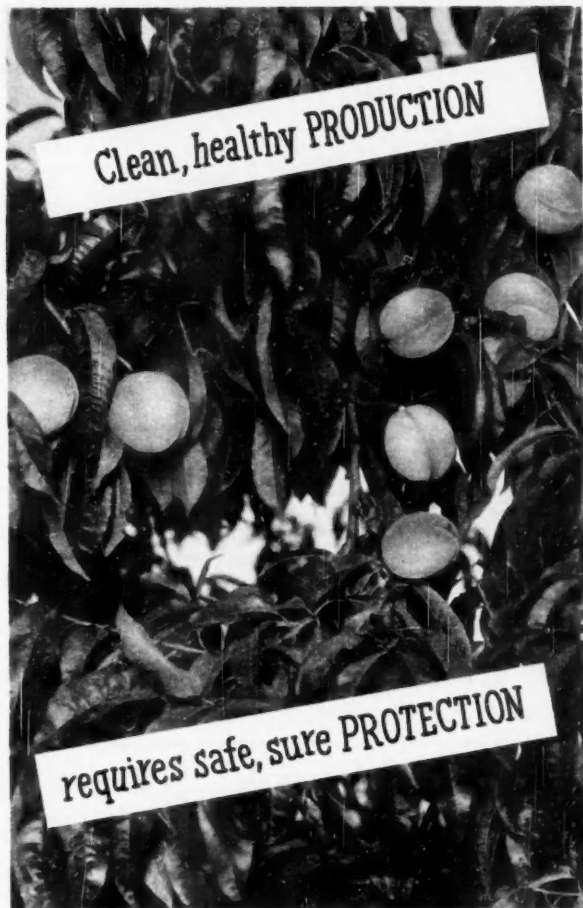
"Two gallons!" I said. "You could have burned all the buds off your trees!"

"I'm just lucky!" he said. "I got fine results."

Many of the newer products require a careful study of the label and the accompanying literature to obtain the desired results. Great strides have been made in helping to produce better crops for less by the use of chemistry in agriculture. Even greater benefits will come from the chemists' test tubes if the products are properly used.

Take care, then—don't be the fool who walks in where angels fear to tread—it may make an angel out of you if you don't read the label.

APRIL, 1950



YOU'LL find no cleaner, healthier peach crops anywhere than those protected by Niagara dust and spray materials. And there's good reason for this. When you buy fungicides and insecticides bearing the Niagara label, you buy a five-fold package of protection...

- 1 The latest, most effective orchard-tested formulations.
- 2 Laboratory control of quality on all Niagara products.
- 3 Forty-six years of leadership in manufacturing better agricultural chemicals.
- 4 A reputation for dependability and uniformity that has won preference by profit-minded growers everywhere.
- 5 Orchard service by highly trained insect-control and disease-control specialists... local men who know local crops and conditions.

For peach growers, Niagara fungicides and insecticides include the following materials available in various combinations for specific control problems.

Kolofog[®], Kolospray[®], Kolodust[®], BHC, Niatox (DDT), PhosKil[†](Parathion), Lead Arsenate, Basic Lead Arsenate.

[®]Reg. U.S. Pat. Off.

[†]Trademark



Niagara

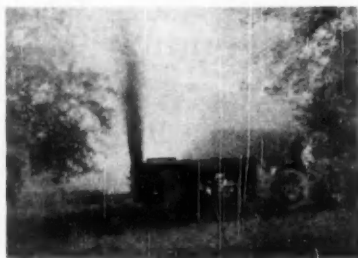
CHEMICAL DIVISION



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A HALE Centrifugal Orchard Sprayer Brings You Real Enjoyment!



Above—Side View of Hale Centrifugal Orchard Sprayer Being Operated by One Man. Banks of 5 Spray Guns on Each Side Work Together or Separately.

IT WILL MAKE YOU MONEY—Users report they grew the "cleanest" fruit last year that they have ever grown due to efficient coverage of HALE Centrifugal Orchard Sprayer.

SAVES TIME—You can adjust spray guns to suit any size tree. . . . Centrifugal Pump provides volume large enough to allow spraying as fast as tractor will run. . . . pumps any desired capacity up to 100 GPM at 600 lbs. pressure.

SAVES MONEY—Tractor driver is only man required to operate sprayer. Accurate records show that labor cost is about 1/2 the cost per 500 gallons of spray applied, compared to previous methods.

LESS EFFORT—No men required to handle spray

guns. Controls extend to within easy reach of tractor driver.

FLEXIBILITY—Sprayer will handle Dormant Spray Solutions as well as usual spray chemicals. (The large volume centrifugal pump is ideal, too, for feeding trees by spraying fertilizer).

PRESENT OWNERS ARE PROUD of their HALE Centrifugal Orchard Sprayer because of results that prove the Hale Sprayer's Value. . . . speak of the real enjoyment the sprayer has brought them in freedom from spray troubles.

WRITE TODAY for Bulletin #302. Please state number of acres in orchard or grove (Dealer inquiries invited).

HALE FIRE PUMP COMPANY, Conshohocken, Pa.

Advertisement



From where I sit ... *by Joe Marsh*

Handy and Easy Are Both Wrong

Handy Peterson and Easy Roberts got in quite an argument the other day over at Fred's Garage talking about the best spot to fish up at Green Lake.

"Opposite the sawmill is the best spot," says Handy. But Easy "pooh-pooh's" him. "I've seen the biggest fish caught off Cedar Point," says Easy. "I've been catching them there for years."

Then Fred goes and brings out the biggest mounted rainbow trout you ever saw. "I bet you that was caught at the sawmill," comments Handy. "Cedar Point," says Easy.

"Well," says Fred, "you're both wrong. I caught this baby right out in the middle!"

From where I sit, there are always two (or more) sides to every story. Let's live and let live in the true American tradition of toleration. Your opinion is worth a lot, but so is the other fellow's—whether it's on politics, the best fishing spots, or whether he likes a temperate glass of beer and you like buttermilk.

Joe Marsh

THE CONTROLLED TREE

(Continued from page 11)

ation, but as yet they have shown nothing outstanding. The remaining—Malling I, II, V, VII, IX, XII, XIII, and XVI, have a record of performance that can be told.

Malling IX is the most dwarfing. It produces a garden plant no taller than a man—highly useful for amateur planting but unsuited to the temperament of American apple growers. Next in line is Malling VII, which produces a tree about the size of a peach tree, depending on the variety. With vigorous growing varieties, as Northern Spy, this rootstock may have a place. Certainly it has a place in the home garden where the Malling IX produces too small a tree.

Semi-Dwarf Stocks

Then come Malling V and Malling II, both of which may be classed as "semi-dwarfs." Malling V is a good nursery plant and produces a tree slightly smaller than Malling II. Malling II has been widely used in Europe and is also suitable for America, but it roots slowly in the nursery and is not liked by nurserymen for this reason.

Malling I and XIII are next on the list, called variously "semi-dwarf" and "semi-standard," depending on the variety grown upon them and the soil and location where they are grown. Malling I is quite precocious in fruiting. It seems well adapted to the McIntosh variety, trees of which attain the size of a small sour cherry tree and which begin bearing at three to five years of age. Malling XIII makes a tree slightly larger, less early in fruiting, but seemingly adapted to heavy soils. Golden Delicious, Cortland, and Turley have done well upon it.

This leaves only the Malling XVI and XII. The former is an old German stock which produces a full size tree in Europe but one perhaps slightly smaller than standard size in America. Malling XII produces a full size tree.

At the moment, most interest centers on Malling IX for garden use; Malling VII for garden planting and for limited commercial operations with vigorous, late-bearing varieties; and Malling I for semi-dwarf, commercial plantings. Malling II, XIII, and XVI may prove their worth but at present are not in the foreground.

Extensive Testing Necessary

The problem has reached a place where it is time that nurserymen and fruit growers took hold. The Malling rootstocks are in the same position as a new variety of fruit which has passed an initial test. They offer

FOR OUTSTANDING APPLE SCAB CONTROL



use **CRAIG**
TRADE MARK

FRUIT FUNGICIDE 341C

CRAIG Fruit Fungicide 341C has been proved by experiment station tests and by commercial growers to be outstanding for apple scab control. Reports show that post-bloom sprays not only give excellent scab control but also give these "bonus benefits."

- improved color and finish of fruit
- better foliage
- improved health of trees

And here's a combination that's hard to beat—outstanding apple scab control and suppression of European red-mites—ALL IN ONE SPRAY. Field tests show that CRAIG Fruit Fungicide 341C in a complete post-bloom spray program will keep red mite populations from building up to damaging proportions. You can simplify your spray schedule, and save time and labor too, with this easy to use, "double-action" fungicide.

For this season's supply see your dealer today. Or write to:

CRAIG
TRADE MARK

AGRICULTURAL CHEMICALS

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APRIL, 1950

some promise—how much, nobody knows. There will need to be more trials and testing over a wider range of conditions than can be done by experiment stations alone.

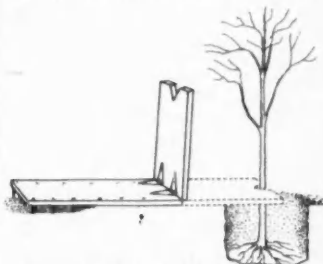
From here on, those interested must accept a degree of calculated risk. Growers should begin to ask for trees from nurserymen, nurserymen should become more interested in propagation, and somebody somewhere should begin propagation of rootstocks on a more extensive scale for the nursery industry.

It may be found in time that there are faults in these rootstocks that will condemn them. It may be that as yet unknown American rootstocks will eventually answer the problem for the small, controlled tree. But at this writing it would seem that the Malling rootstocks have proved worthy of pilot-scale trial and that the fruit industry must accept some of the testing on a limited scale as a calculated risk of the business.

PERFECT ALIGNMENT

IN striving for perfect tree alignment in the young orchard, a planting board is useful to save resighting of a tree after the hole is dug. The conventional board usually requires two temporary stakes which mark the position of the board in realigning the tree after the hole is dug. If one of the stakes is accidentally kicked out of place, the exact position of the tree is lost.

One of the slickest tricks in planting boards I have seen was brought to my attention by Clyde W. Rocky, a retired fruit grower of Berrien County, Michigan. It consists of two



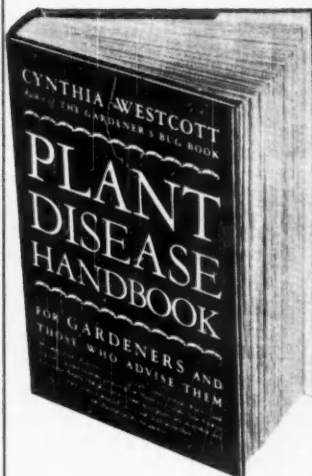
pieces of 8x10-inch board joined together by a 6-inch hinge.

One side of the board is held in place on the ground by several 20-penny spikes. The other side of the board is "V" notched to fit against the tree-marking stake.

The notched end is raised and thrown back while the hole is dug and can be swung forward to the original position to determine the exact placement of the tree. The board is always in correct position—no stakes to drive or carry.—Donald Cation, East Lansing, Mich.

JUST OUT!

The most complete, scientific, and up-to-date reference work available on the diseases of tree and bush fruits, as well as other woody plants, shrubs, vegetables, and ornamentals.



800 pages (6" x 9") covering approximately 1,000 host plants and 1500 diseases and their controls, all arranged for quick, easy, and exact reference.

• Cynthia Westcott's vast practical and technical knowledge of plant pathology—in every part of the United States—is now at your personal service in this single, authoritative volume which treats in clear detail the identification, prevention, and control of plant diseases caused by bacteria, fungi, viruses, nematodes, and nutrient deficiencies. All important entries are illustrated with line drawings and photographs by the author.

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now for 10 days free examination. We pay postage if cash (\$7.50) accompanies order. It is understood that full cash refund will be made if book is returned within 10 days.

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(Price slightly higher in Canada)

CHEMICAL THINNING

(Continued from page 14)

in thinning some fruits and not others could be partially explained on the basis of vigor. The diameters of 900 dormant Wealthy spur flower buds were measured on nine limbs. They were tagged and classified in four groups according to their size. Then at calyx and two weeks later sprays of the hormone were applied. Three different limbs were sprayed each time and three were left as checks.

Data in Table 1 indicate that vigor of the blossom bud or spur is an im-

portant factor in determining why this hormone thins some blossom clusters to a greater extent than others.

TABLE 1. Influence of an NAA material on the set of Wealthy spur flower buds.

Treatment	Size of dormant flower buds (mm.)	Fruits per 100 flower buds
Check	-4.1	28.6
	4.1-4.7	31.5
	4.8-5.4	43.1
20 ppm. at calyx	5.5+	71.9
	-4.1	0.0
	4.1-4.7	12.7
40 ppm 2 wks. from calyx	4.8-5.4	22.7
	5.5+	56.3
	-4.1	0.0
	4.1-4.7	11.5
	4.8-5.4	31.2
	5.5+	55.5

This appears to be an advantage of the material because greater thinning of poor quality fruit on the weak spurs in the interior of the tree is accomplished. It also indicates that it may not be desirable to spray-thin trees low in vigor. Although vigor appears to be important in determining the extent of thinning accomplished by this hormone, there are unquestionably other factors which influence the degree of thinning. For instance, it appears that at a given concentration a variety may absorb varying amounts of hormone, depending upon the amount of leaf surface present to absorb the material and

CUT YOUR COSTS with a BUFFALO TURBINE SPRAYER DUSTER

● It will not only save you money but will also do a better job of spraying and dusting for the axial flow blower sets up a turbulent air stream giving greater penetration and better coverage with less material per tree. The BUFFALO TURBINE is completely universal—dusts, sprays, or both—and is entirely a one-man machine with controls within easy reach of the operator.

As prices become more competitive, costs are increasingly important. The rugged BUFFALO TURBINE which is built in three models—for truck, jeep or as a trailer—will save you money in your insect and disease control program. Labor costs are reduced as much as 80 percent. Liquid used is cut by 90 percent and the material savings have been reported as high as 50 percent. BUFFALO TURBINE can do the job better, cheaper, faster and more thoroughly than is possible with your present spraying equipment. Let us prove to you that we can cut your cost.

- SAVE on original cost of equipment
- SAVE on labor
- SAVE time in making application
- SAVE on materials

Fill in the coupon and we will send descriptive literature on our revolutionary SPRAYER-DUSTER.

Buffalo Turbine Agr. Equip. Co., Inc.
Gowanda, N.Y.

Please send me your literature.

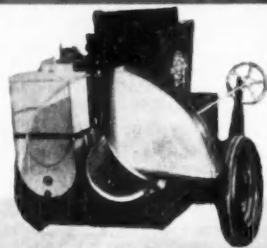
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R.R. or St. _____

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BUFFALO TURBINE

AGRICULTURAL EQUIPMENT CO., INC., GOWANDA, N. Y.
Manufacturer of the Original Mist Sprayer-Duster



HANDY ANDY



This homemade cultivator plow is one of the handiest tools on the place, says Russell Eggert, superintendent of the University of New Hampshire Horticultural Farm. It meets the needs of the orchardist, berry grower, and market gardener for a tractor mounted device that will operate between wide rows at adjustable depths, prepare seed-beds in hard-to-get-at areas, till young orchards, clean borders, etc. The sturdy, double-spring shanks from an old-style cultivator give its duckfeet the firmness they need for plowing. The frame was welded to hold seven sweeps which cover a five-foot wide span.—E. Gilman.

possibly the influence of such environmental factors as temperature on the rate of absorption.

During the past two seasons most of our emphasis in Massachusetts has been on the use of this hormone as an after-calyx treatment. Chemical thinning 10 days to 3 weeks after calyx, for instance, would allow one to determine the necessity for thinning more accurately than at bloom or petal fall. It is recognized that delaying the application until after calyx will be at the sacrifice of fruit size and possibly reduce the chances of annual flowering with some varieties compared to

the same degree of thinning at blossom time or calyx. However, the matter of safety, if it is found to be safer, might justify the sacrifice.

With the heavy setting varieties Baldwin, Wealthy, Golden Delicious, and Early McIntosh, providing the trees were in a high state of vigor, satisfactory commercial thinning has been obtained by NAA materials at calyx and from two to four weeks thereafter. Table 2 includes some data on Baldwin which are representative of results obtained from these varieties.

TABLE 2. The influence of an NAA material applied 2 weeks after calyx on the set, yield and size of Baldwin.

Treatment	Fruits per 100 blossoming clusters	Av. Total Yield per tree (bu.)	Av. Yield per tree $2\frac{1}{2}$ " and up
Unthinned	91.6	16.1	3.5
Sprayed 30 ppm	23.0	9.2	8.6

In our after-calyx tests, concentrations ranging from 6 to 16 ounces (15 to 40 ppm) per 100 gallons of water have been used. Sprays containing 8 to 12 ounces (20 to 30 ppm) applied 10 days to two weeks after calyx have approximated the most desirable concentration range for the four varieties previously mentioned.

Although after-calyx treatments with NAA have some advantages, they also have several disadvantages. The apparent disadvantages are: 1) NAA may cause considerable permanent foliage injury to some varieties. In Massachusetts, for example, Duchess has been very susceptible to injury and several other varieties are apt to exhibit some foliage injury. 2) NAA has been somewhat erratic in performance. In other words, in apparently similar blocks applications of this material at a comparable time and concentration may yield different results. 3) To date sprays applied after calyx with NAA materials have failed to thin some varieties. In 1949, tests in Massachusetts on both Red Astrachan and Gravenstein were failures, because of this fact. Whether different timing or concentrations will overcome this difficulty is not known.

At the present time it appears that the use of NAA materials for thinning apples is still a rather delicate operation requiring good judgment. The point has not been reached where their use can be recommended as one might recommend the use of a fungicide for apple scab control. Growers should gain some first-hand experience with NAA materials before using them too generally. Considering the present drawbacks of the NAA materials, it appears that there is still a place for a dinitro in the chemical thinning program.

APRIL, 1950

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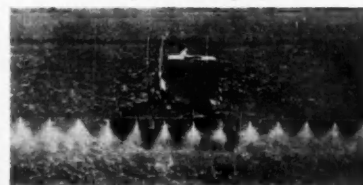
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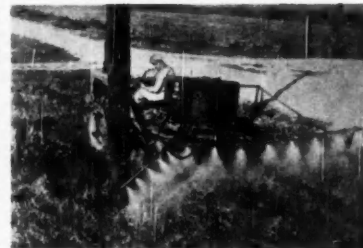
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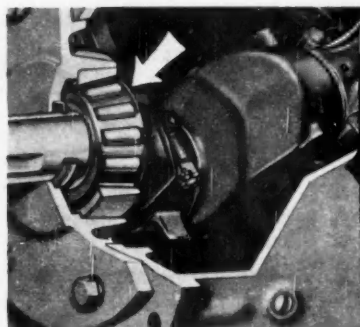


Interest in orchard heating in northern areas is on the increase. Along with this interest has come the development of an inexpensive orchard heater which is just being placed on the market by the United Stove Co., Ypsilanti, Mich. Made of sheet steel, the kettle-type drums burn low grade oil at the rate of about one-half gallon per hour. Once lit the heater will burn until the fuel is consumed. The turned up vanes on the cover induce the right amount of draft to make the flame burn high while keeping fuel consumption at a minimum. In tests at Michigan State College temperatures in the orchard were held at an average of $5\frac{1}{2}$ to 6 degrees above the outside temperature.

New Disk Tiller



Just in time for spring planting is the new John Deere Surflex Disk Tiller, a tiller that combines great capacity with ground-hugging flexibility. Available in 12-, 16-, and 20-foot sizes, the Surflex has such important features as gang linkage to prevent ridging and gouging, a single control (manual or hydraulic) for raising or lowering all gangs simultaneously and uniformly, a simple hitch that permits short turns without fouling, and Timken tapered roller wheel bearings and ball-bearing gang-shaft bearings. If you are planning to set out a new orchard or berry patch this spring, you will want to know more about this tiller. Write John Deere, Moline, Ill.



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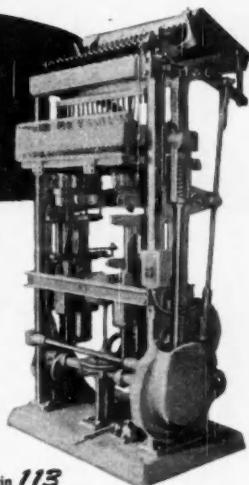
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Literature on request

FRUIT POLLINATION

(Continued from page 13)

branches are placed upon a table in the orchard, around which sit those who extract the pollen. This method is sometimes modified so that only spurs are used.

Eight-mesh hardware cloth or screen is commonly used for rubbing off the anthers. The hardware cloth is substituted for the fruit-jar cap when a fruit jar is used for collecting pollen. When a box is used, a piece of the hardware cloth is fastened rigidly over the box.

The stem of the blossom is grasped between the thumb and forefinger and the blossom is pressed against the screen so that the stamens stick through the screen. With one or two swipes, the anthers are pulled loose and drop into the jar.

Green pollen never should be held in quantities nor at temperatures that permit heating. For curing, place it one-eighth inch deep in trays. Slick, stiff paper is preferable for making the trays. Curing requires approximately 36 to 48 hours at 68° to 70° F. Excessive heat may cause serious injury. Because of the danger of overheating, the curing trays should never be in the direct rays of the sun. Enough ventilation to keep the humidity about the same as that of a living room is desirable. When curing is complete, the pollen sacks are open and pollen dust can be seen on the walls of the tray.

The pollen is ready to use as soon as it is cured. If it cannot be used immediately, it should be held where it is dry and cool. If dry storage at about 34° F. is not available, the household refrigerator may be used. Here the lid of the pasteboard carton in which commercial pollen is shipped should be perforated to keep the pollen from becoming moist. The sooner it is used after curing, the better. The common household refrigerator has a dehydrating effect.

Applying the Pollen

Efforts are being made to develop labor-saving methods of applying pollen. With tree fruits, airplanes, bombs, shotguns, and sprayers are being attempted. With the many immeasurable factors at play in fruit pollination, there is danger of prematurely crediting success to hoped-for labor-saving methods. At the present time these methods are highly experimental and show little, if any, benefit. Small insect dusters, however, seem to give good results from the standpoint of getting the pollen on the pistils and of being faster than the hand brush method.

For practical purposes, pollen may

AMERICAN FRUIT GROWER

be applied to a single blossom during a period of approximately 48 hours, beginning when the blossom is nearly open. The pollinating period in a given orchard may be extended by starting when a good sprinkle of blossoms is out on the south side of the tree and coming back a second time to cover the other side.

The pollen may be applied with a small brush with fairly stiff bristles, the rubber end of a lead pencil, or the bare finger. A No. 4 pig-hair brush has been adopted fairly generally. Some growers, to make the pollen go farther, prefer to place a rubberband halfway down on the bristles and cut the bristles off square, one-fourth inch below the band. Others prefer to allow the bristles to spread out to ensure that all parts of the pistil are treated, even at the cost of extra pollen.

The pollen, which is usually carried in a small vial or a wide-mouthed bot-

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tle, must be convenient as you work. It is customary to carry it in the shirt pocket.


With practice, pollinators become skillful so that the pistils are reached with ease. Some prefer to make two "hits" for each blossom, one to get aim and the other to apply the pollen. One dip in the pollen bottle is adequate for six to eight blossoms. Ordinarily, it is best to start out with about one-fourth ounce of pollen and add to it as necessary.

The spacing of pollinated blossoms depends upon several factors. If labor is scarce, there may be time for covering only the windy side or the north side of the tree. In some cases, because work is faster from the ground, it may be advisable to work only from the ground. The proximity to pollen that may be brought in by natural means, also is a factor.

In general, it must be assumed that insofar as the artificially-applied pollen is concerned, it reaches only the blossoms you touch. It is true that if insects are working freely while you are working, they must carry some pollen. Unfortunately, they frequently are elsewhere at that time. They sometimes are credited for improving the set that resulted from artificial pollination when in reality the improvement is due to other factors. For example, in many orchards, insects bring considerable pollen in from other orchards. It is safe to assume that

(Continued on page 42)

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FRUIT POLLINATION

(Continued from page 41)

with self-fruitful varieties, this factor during seasons of good insect activity must account for setting some fruit. The evidence at hand indicates it is hazardous to place much reliance upon insects for distributing pollen applied artificially.

It would seem, then, that you should pollinate as many blossoms as you want to set. One blossom in every fifth cluster on a tree in good bloom is not too far off.

We can aid natural carriers of pollen by placing bouquets in the orchard. These are effective only when the weather permits insect activity. There is usually at least a short period of such weather during each blossom period.

Place the bouquets where insects like to work. The warmer and sunnier the location, the better, as long as it is



HANDY ANDY

Spraying fruit trees from the ground may be a thing of the past with the use of spray tank equipped helicopters. One of these specially outfitted helicopters was used to spray the McIntosh orchards of George Parker and his neighbors, Hillsborough County, Wilton, N. H., with naphthalene acetic acid.

In the past regular airplanes had been tried to drop the concentrated "stick" spray. The experimental use of the helicopter was found to be far superior as it could travel slower than a plane and get much better coverage at the end of the rows and in corners where high trees or wires would have to be cleared by the faster machines.—C. L. Stratton.

protected from the wind. A small bouquet per tree placed rather high on the south side is usually adequate. The most common method of bouqueting, however, is to place large branches in barrels of water on the ground.

The ideal stage for cutting the bouquets is when the most advanced blossoms are open. The sooner they are in water after cutting, the better. When convenient, place them in water immediately following cutting, especially if they must be hauled some distance. Cutting the branches off under water helps to keep them fresh.

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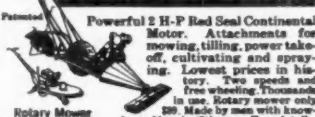
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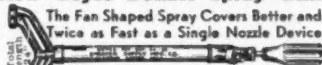
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Sickle mower, power driven, rubber tired, pulls self, cuts high grass, hay, weeds, on level or rough. Moderate price.



Write for Catalog 6 times faster than a scythe!



SAVE GRASS-CUTTING LABOR!
ORDER the new POWER DRIVEN MOWER. Cuts grass evenly and smoothly in a few minutes. Rubber tires, 4-cycle engine. Another great power driven mower by NATIONAL.
30 Years in Power Mowers

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OTTAWA
Mule Team Tractor

Finest low-cost tractor. Costs too little to do without. Engines burn gasoline or kerosene. Starter and lights available. Other larger Models to choose from. Over 4,000 in world-wide use. Time-proven, tested. At low cost they easily mow, plow, disc, harrow, plant, cultivate, etc. Sold only direct to user. FREE details. OTTAWA MFG. CO., 2-032 Garden St., Ottawa, Kan.

APRIL, 1950

STATE NEWS

(Continued from page 17)

VIRGINIA, Mar. 14—This state had a very mild winter until about the middle of February. Since then temperatures have dropped to as low as 10° above zero. Considerable killing of peach buds has been reported. Peaches in central Virginia are showing some pink. With temperatures as low as 10°, growers have cause to be alarmed over the peach situation.

To date no reports have been received of injury to apple buds. With three disastrous frost years in a row, Virginia apple growers hope Mother Nature will give them a break this year.—John F. Watson, Sec'y, Staunton.

TENNESSEE, Mar. 15—Orchardists still have a fighting chance to produce a good crop of peaches and a fair crop of plums and pears. Around one-third of the strawberry blossoms on the leading Blakemore variety already have been killed by frost and freezes during the abnormally heavy early bloom. Prospects on apples, just starting now to break their winter rest, are good throughout the State. Crops of all leading commercial fruits in Tennessee (except possibly apples) can be larger in 1950 than they were in 1949, if a normal percentage of buds now alive survive the next 30 days. This is what leading growers and experiment Station fruitmen report in a mid-March survey made by the State horticulturist.

The loss in strawberries is quite general, except that the newer Tennessee Beauty, Tennessee Shipper, and Tennessee No. 965, in that order, have survived the cold better than the early-blooming Blakemore variety. With the coming of warmer weather, strawberry growers should be alert to prevent still further losses due to strawberry weevil and crown-borer insects. They should apply dusts of 20 per cent Toxaphene or else equal amounts of DDT and Chlordane (five per cent of each) at the rate of 35 pounds per acre.

(Continued on page 45)



PROSPECTIVE FRUIT GROWER? With Grandpa looking on, 17-month-old Joe McDaniel, Jr. (son of State Horticulturist J. C. McDaniel) inspects March bloom on peach-apricot-plum combination tree at Nashville.



Apples, Avocados, Apricots

You'll handle these—and all other fruits—faster, safer and cheaper—with Rapistan Material Flow equipment! Rapistan conveyors rush your fruits from orchard to delivery truck . . . eliminate bruises from rough handling . . . reduce spoilage to a minimum. Write for full details!

The RAPIDS-STANDARD COMPANY

254 Rapistan Bldg., Grand Rapids, Mich.

"Rapistan," "Material Flow"—T. M.



CONVEYORS—Gravity or Power, Portable or Stationary
HAND TRUCKS—FLOOR TRUCKS—CASTERS

jari is YOUR FARM'S BEST FRIEND!



Keeps weeds down in fence rows, orchards, mows lawns. Slashes thru thickest underbrush with super-rigid specially designed knife. Cuts six acres of forage a day. Easy to handle . . . your youngster can run it.

HERE'S GOOD NEWS

New Power Spray Attachment kills weeds on lawns, crops, destroys fruit pests. Even sprays water paints. See your dealer or write for details.



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Power SCYTHE AND SPRAYER

Jari Products, Inc.
2934D Pillsbury Ave.
Minneapolis, Minn.

DEALERS: Direct factory dealerships available.

OPPORTUNITY ADS

Only 25c a Word—CASH WITH ORDER. Count each initial and whole number as one word. ADDRESS AMERICAN FRUIT GROWER, 1370 Ontario Street, Cleveland 13, Ohio

AGENTS WANTED

AMAZING OFFER—\$40 IN YOURS FOR SELLING only 50 boxes. Also entirely different, new Deluxe All-Season assortment with television card, Little Pearls, Hankie Gift Certificates, other surprise items. Feature boxes on approval. Free samples imprinted stationery and Roy. Several Notes. Write today. It costs nothing to try. CHERFILL CARD CO., 1200 White Plains, N.Y.

BEEES

PACKAGE BEES FOR MAXIMUM SET OF FRUIT 3 lb. package with queen, \$2.50. Without queen, \$2.50. THE COFFEY APIARIES, Whitsett, Texas.

FLAVORFUL ITALIANS THAT WILL STAND test for honey gatherers, gentle, prolific. Prompt, live delivery, guaranteed. Place orders early. Package with young queen 2-lb. \$2.50; 3-lb. \$3.45; 4-lb. \$4.30; 5-lb. \$5.30. Extra queens \$1.00. FLOWERS BEE CO., Jessup, Ga.

STRONG COLONIES BEES FOR POLLINATION. LAKE Ontario and Finger Lakes Region. Write C. A. JENKS, Canandaigua, New York.

ITALIAN QUEEN BEES \$1.00 EACH. W. G. RALEY, Route 4, Montgomery, Alabama.

PACKAGE BEES 3 LBS. WITH QUEEN \$4.75. HOWARD WEAVER, Sarasota, Texas.

CHAINS

CHAIN TRACTOR TRUCK, ROAD GRADER, BUN Write for circular, give tire sizes—Prompt shipment. HORNER TRACTOR SALES, Genoa, Ohio.

CIDER MILLS

FOR SALE: CIDER PRESSER NEW AND REBUILT, all sizes. Paragon and other makes. Apple Sizers and Apple Butler Equipment. W. G. BUCKLEN, MA. CHINERY CO., 185 Oakland St., Trenton, New Jersey.

FOR SALE—EQUIPMENT & SUPPLIES

ATTENTION HOME OWNERS AND FARMERS! BIG savings are yours on Fence, Paint, Building Material, Appliances, Farm Poultry and Dairy Equipment—all in the big new Jim Brown Catalog. It's packed with over fifteen thousand outstanding bargains. Write today, it's FREE! BROWN FENCE AND WIRE DIV., Dept. F4, Cleveland 13, Ohio.

FOR SALE: "SPEED SPRAYER" 1946-110 H.P. Supply tank and transfer pump. "Friend" Sprayer—30 gal. per min. 500 gal. tank on 2 rubber tires. International 06 tractor. Gruball L4 Grader—100 bu. per hr. 4 sizes and eliminator. WILLARD FARNSWORTH, Waterville, Ohio.

COMPLETE Engine driven 10 KW. 110/220 volt, A.C. Lighting Plant. \$500.00; 2500 Watt 220/0 volt, 15 KW. Generator ideal for tractor standby drive \$490.00. KATOLIGHT, Mankato, Minnesota.

FOR SALE: MYERS 1946 THREE CYLINDER POWER Sprayer. Write for information to SAM KRUMMEN, Route 4, Hutton, Indiana.

BEAN TRIPLEX SPRAYER, 300 GALLON TANK, 12 horse power engine. Friend FX22 Sprayer, 300 gallon tank, 50 horse power engine. Low price for quick sale. LAWRENCE MEIRLE, 444 South Brentwood Blvd., Clayton, Missouri.

HARDIE HIGH PRESSURE ENGINE POWERED tractor sprayer. Top condition. 35 gallon pump, 25 horse Waukesha, 400 gallon wood tank, 9 x 24 tires. "Sprayrite" orchard boom. Hose and gun, \$1250. "SE-RI-BAR" ORCHARD, Route 1, Ashton, Mich. Phone 4344.

2-300 GALLON HARDIE SPRAYERS ON RUBBER with 30 G.P.M. Pumps. 1 Chevrolet Tractor. C. E. OPPERMAN, Birmingham, Ohio.

35 GAL. USED FRIEND SPRAYER, 20 GAL. USED Bean Sprayer. Both sprayers are in perfect condition and are guaranteed. Reasonable. SALEM SERVICE AND SUPPLY, Salem, Ohio.

FOR SALE: Heavy duty hydraulic brush paster complete for AG Cletrac—8 foot cover crop orchard disc like new. RICHARD SCHAUER, Madison, Ohio.

JUST OUT! GET LARGEST AUTO ACCESSORY AND parts catalog in world. Over 15,000 items, including Hollywood accessories, hi-speed equipment, rebuilt engines; all parts and accessories for all cars, trucks. New, used, rebuilt! We have that hard to get part! Completely illustrated, Jan-packed with bargains. Send \$2c. J. C. WHITNEY CO., 1919 E. Archer Ave., Chicago 16, Illinois.

HONEY

PURE HONEY: THE VERY "ESSENCE OF CLOVER"—Minnesota's finest extracted white clover honey with a mild pleasing flavor. 5 pound pail \$2.00 postpaid, 60 pound can \$9.00. You pay express. ROBERT K. DENNY, Roseau, Minnesota.

FOR SALE—DELICIOUS HONEY CLOVER OR BUCK-wheat, 5-lb. can \$1.35; six 5-lb. cans \$7.50; 60-lb. can \$10.00. Prepaid. FRED WRIGHT, Arkport, New York.

HORSE TRAINING

"HOW TO BREAK AND TRAIN HORSES"—A BOOK every farmer and horseman should have. It is free, no obligation. Simply address BEERY SCHOOL OF HORSE-MANSHIP, Dept. 1284, Pleasant Hill, Ohio.

IRRIGATION

IRRIGATION EQUIPMENT—IMMEDIATE DELIVERY of light-weight pipe. Complete systems, including pump, fittings and sprinklers. Featuring famous and exclusive McDevell automatic coupling and sprinkler that covers a little under three acres. LUNDQUIST COMPANY, INC., Putnam, Conn.

IRRIGATION. RAIN AGAIN WITH RONNINGEN. WE are engineers with 29 years experience specializing on irrigation systems for big acreage crops: mint, potatoes, ornamental crops and orchards. McDowell portable irrigation pipe; Skinner sprinklers, pumps. Terms. Write for free bulletins. Engineering surveys free. Farms large or small. We irrigate them all. RONNINGEN ENGINEERING SALES, Yickburg, Mich. Phone 5161.

MISCELLANEOUS

ADVERTISING PENCILS—KEEP YOUR BUSINESS before the eye of the public. Write for samples and prices. EASTERN ARTCRAFT, P.O. Box 523, Philadelphia 26, Pa.

MAKE MONEY ADDRESSING ENVELOPES. OUR instructions reveal how. PAUL GLENWAY, 5713 Euclid, Cleveland 5, Ohio.

WOMEN TO SEW OUR READY-MADE "RAP-A-ROUND." Spare time—easy profitable business. HOLLYWOOD MPF CO., Dept. 4-4, Hollywood, Calif.

STAYAL YOUR OWN BUSINESS. SELL BY MAIL. Unusual opportunities. 10c brings 60 page informative trade magazine. IRRELL, Suite 619-AG, 216 West Jackson, Chicago 6, Illinois.

WINNER—MAKE YOUR OWN FROM GRAPES—Raisins—Berries—Oranges—Dandelions, etc. Easy home method. Detailed directions. 25c coin. OZARK ENTER-PRIZE, Cell 60, Mo.

ORCHARDS FOR SALE

20 ACRES. MODERN FOUR ROOM DWELLING AND 2 Car Garage; about 35 ACRES in Winter Apples, 10 to 20 year-old trees, healthy and well kept. About 18 miles to Cleveland or AKRON, OHIO. On State Route 174. Remarkably low priced at \$22,000.00. FRED CLARK REALTY, 8071 Broadview Rd., Cleveland 9, Ohio.

FOR SALE—79 ACRES HUDSON RIVER FRUIT FARM. Pits Ace bearing apple orchard, prime condition, good buildings, fine location. Could be good tourist or boarding house. Wonderful market on farm. Reason poor health. age 1 mile to Highland, 10 minutes Poughkeepsie, 75 miles New York. WM. E. HART, Highland, New York.

FOR SALE: 300 ACRES WITH 75 ACRES FULL bearing apple orchard. Beaver County, Pennsylvania. Owners ill. Wonderful opportunity. Brokers protected subject to prior sale. WHITE AMERICAN FRUIT GROWER, BOX 165, 1370 Ontario St., Cleveland 13, Ohio.

AN Opportunity to purchase a 40-acre fruit farm and equipment, 1565 Peach, 350 Apple trees, 2 acre grapes. Owner has had to move to Colorado for his health. ALFRED MEINZER, Resitor, Oak Harbor, Ohio.

FOR SALE—66 ACRES—45 ACRES IN APPLES, 7 room modern house full basement. Hot water, furnace, garage 76-38 refrigeration, storage above basement 36-50. For crates and baskets. Packing house 32-50. Garage, containing pool 55 ft. across. Reasons for selling will retire. If interested come and see it. CHARLES E. RIESER, Sr., Harpster, Ohio, RR.

CENTRAL ILLINOIS ORCHARD, 200 ACRES PRODUCE TREES. Three houses. All equipment included. Price \$32,000. Write ROBERT F. TATE, Bloomington, Illinois.

FOR SALE OR LEASE ON YEARLY BASIS, 2044 acres Hartville muckland. Part of Minnie Taylor Farm. Perfect condition. Write to MINNIE TAYLOR FARM, Box 445, Hartsville, Ohio.

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MOTTLED HOUDANS, MY SPECIALTY. EGGS, Chicks, Stock. Circular. FRED BRUNON, Box A, Watertown 15, N.Y.

PEAFOWL, SWANS, PHEASANTS, GUINEAS, DUCKS, Geese, Thirty Varieties Pigeons, Bantams, Stock, Eggs. JOHN HARR, Bettendorf, Iowa.

HELM'S FULBROOK PASSED CHICKS FAMOUS for years. Egg Contests records over 30 years. Brood hens holder three World Records. Crossbreeds, Turkeys, Brooding bulletins. ILLINOIS HATCHERY, Metropolis, Illinois.

HAISE TURKEYS THE NEW WAY. WRITE FOR FREE information explaining how to make up to \$5,000 in your own backyard. Address: NATIONAL TURKEY INSTITUTE, Dept. 232, Columbus, Kansas.

TRADE MARKS

NATIONAL TRADE MARK COMPANY, MUNSEY Building, Washington, D. C.

WANTED TO BUY

WANTED—UNIMPROVED FARM. RATHER CHEAP. HERBERT AYER, Route 1, Newtown, Ohio.

FIFTY GALLON SPRAYER, SMALL HYDRAULIC "Cider press, BKA HOFF, Cambridge, Texas.

WANTED: 200-300 Gal. Pressure Sprayer on Wheels. H. ZERKE, 2041 Belle Plaine, Chicago 18, Illinois.

OLD GOLD WANTED—CASH SENT PROMPTLY FOR broken jewelry, spectacles, gold teeth, diamonds, watches, etc. Mail articles today or write for FREE shipping container. LOWE'S, Holland Bldg., St. Louis 1, Missouri.

WANTED TO BUY—15 GAL. HAND POWER SPRAYER. H. WAINWRIGHT, 6301 Kennedy, Cincinnati, Ohio.

A USED APPLE GRADER AROUND 100 RT. PER hour capacity. ELWOOD WAT, Fort Matilda, Pa.

CORN CENTER DOIN'S



"That's Lem Perkins—the Flyin' Farmer—sex he basta have top traction to git outa that pasture!"



Power-Curve is a new tractor tire development and is exclusive with B. F. Goodrich.

This new design gives more power, more traction—outpulls other leading brands. And when tested side by side with other tires, the new BFG design outwore them all! See

for yourself . . . compare all 3 leaders. Watch all three perform. We think you'll select the new B. F. Goodrich Power-Curve tread on every count—traction, cleaning, long wear, smooth ride and economy. See the B. F. Goodrich man next time you're in town . . . SEE POWER-CURVE . . . the newest thing in tractor tires.

An advertisement of The B. F. Goodrich Company, Akron, Ohio.

CERTIFIED CULTIVATED BLUEBERRY PLANTS

Wholesale & Retail
15 VARIETIES
Order NOW for Spring or Fall Planting
MONROE FARMS
Box 555, Browns Mills, N. J.
Member of the Blueberry
Cooperative Association

High Quality FRUIT TREES

FOR FRUIT GROWERS
Apples Cherries Peaches
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Introducers of: Gilbert Monfermy Cherry
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Quotations furnished at any time
WILLIS NURSERY CO., Dept. A, Ottawa, Kansas



800
Varieties Grapes
Specializing in French Hy-
brids
Schroeder Vineyard
Hutchinson, Kansas

ORCHARD TESTED FRUIT TREES

We offer only varieties that have been tested in our orchard. We practice bud selection for extra quality, color and vigor, which insures you the very best in variety characteristics. We specialize in Apple, Peach, Cherry, Plum.

CATALOGUE FREE
SIMS FRUIT & NURSERY FARMS
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NEW MINNESOTA APPLES: Those Highly Recommended Varieties—**Prairie Spy** Minjon, #790 Oriole. Also Erickson Apple and N. Dak. Red River crab. Low prices and save 20%. Also Latham Raspberry. Buy NOW. CATALOG IS FREE. GROWERS SINCE 1915.
SWEDBERG NURSERY, BATTLE LAKE, MINN.

BERRY PLANTS
Latham Red Raspberries—Cumberland, New Logan Blackberries. \$2.00—50; \$5.00—100; \$10.00—200. New Robinson, Premier \$2.25—100; \$4.00—200. Hardy, northern stock, fresh dig, fully certified disease free. Directions included. Free catalog.
STEGENGA'S BERRY ACRES
Route 3-N, Ionia, Michigan

OLD HOME PEAR (blight resistant)

Now for the first time available in quantity lots at reduced prices. Also a complete line of fruit trees and small fruit plants all of which are Northern grown. Buy direct from a grower and save. Write for our free catalogue.

CHAMPION NURSERIES
150 MAIN STREET PERRY, OHIO

FRUIT TREES
APPLE • PLUM • PEACH • CHERRY
Orchard Prices—Write for Catalog
CALL'S NURSERIES Call Road, Perry, Ohio Est. 1877

"POLLENATORS"—Bees

Package Bees and Queens
Truck shipments billed—write for quantity discount
2 lb. package \$2.25
For additional bees add 60¢ per lb.
Package with queen \$1.00 additional
LEO C. WENNER, Hamilton City, California

WE NEED HELP

Michigan's oldest and largest nursery is looking for full or part-time salesmen to sell fruit trees, roses, shrubs, evergreens and shade trees. Pleasant, interesting and profitable work. Commission check sent weekly. Experience unnecessary. For full details write

Ilgelfritz Nurseries, Inc.
Dept. F, Monroe, Michigan

Peaches, which were beginning to bloom as early as February 1 at Knoxville, have survived the ups and downs of temperature remarkably well during the last six weeks. In the Dayton-Sale Creek area, there is little damage to date in the main-crop Elberta and Brackett varieties. Main-crop peaches in middle and south-west Tennessee still have half their buds alive on good sites, enough for a full crop. The early varieties and northwest Tennessee orchards are even better. But most growers would feel more secure with varieties that would "sleep better."—J. C. McDaniel, State Hort., State Capitol, Nashville 3.

DELAWARE—On July 1, 1950, the Delaware State Apple Commission, created by an Act of the General Assembly, will be one year old. This act provides for a three-man commission appointed by the Governor from a list of apple growers submitted by the industry.

The present members of this commission are: W. H. Richter, Dover, chairman; Frank W. Richardson, Camden, secretary; and Warren C. Newton, Bridgeville.

The act provides for the levying of a tax of one cent per bushel or two cents per 100 pounds of apples grown and packed in Delaware. The income from this tax will be returned to the commission each two years for the purpose of promoting the sale and consumption of Delaware apples. The commission will also carry on campaigns of education, advertising, publicity, sales promotion, and research.

It is their intent to support the National Apple Institute in its national advertising campaign and carry on local sales campaigns whenever necessary. During the first six months of its operation, the commission carried on considerable apple promotion in the State and also assisted growers in the sale of apples through the government purchase programs, export programs, and in other ways.

Several other promotion programs are planned in 1950. The commission will continue to support the National Apple Institute as it feels this organization is performing a great service to the apple industry.—Robert F. Stevens, Ext. Hort., Newark.

CALIFORNIA—J. A. Moffett, 69, of Lemon Cove, pioneer citrus grower and a vice-president of the California Fruit Growers Exchange before his retirement in 1949, died recently. Mr. Moffett was a native son of California. He planted his first citrus acreage in 1914.

Charles Edward Utt, 83, of Lemon Heights, for many years a director of the Exchange Lemon Products Company, died February 5. He, too, was a native of California.

HUNT'S GRAFTING WAXES, RODENT REPELLENT, ETC.
MICHIGAN BEE & FARM SUPPLY
510 N. CEDAR LANSING 1, MICH.
"Successor to M. H. HUNT & SON"

PACKAGE BEES FOR POLLINATION
Take Large or Small Orders Prompt Service
2 lb. package \$3.00
LARSEN & CAMPBELL
1436 Wincoast Road, Carlsbad, California

BEE HIVES

Cheaper than lumber costs you, soft white pine. Also comb foundation. Large factory, selling direct, you save dealers discount. Quick shipments from stock, low freight rates. Shipments arrive in 10 days. Free Catalogue.

WALTER T. KELLEY CO., Paducah, Ky.

BETTER RESULTS from ILGELFRITZ

Where experience leads the way and performance follows

Propagators and distributors in the Great Lakes area of the famous

RIO OSO GEM

WORLD'S BEST ROADSIDE MARKET PEACH

Better plant come this year

We grow a complete list of new and old varieties—WRITE TODAY FOR OUR SPRING PRICE LIST

ILGELFRITZ NURSERIES, INC.

DEPT. FG, MONROE, MICHIGAN

FRUIT & NUT TREES



Largest selection in the West. Apples, pears, peaches, plums, prunes, cherries, apricots, nectarines, Walnuts, Filberts, Almonds, Case berries, Vining berries, Strawberries, Flowering and Shade Trees, 700 Varieties. FREE 48 page catalog.

TUALATIN VALLEY NURSERIES
Route 3, Sherwood, Oregon

GET ACQUAINTED OFFER!

HEAVY BEARING, FAST GROWING
BLUEBERRIES



Certified, early, mid-season, late varieties. FREE LITERATURE. Wholesale prices, write for prices.
GALLETTA BROS.

127 Chew Rd. Hammonden, N. J. Largest in N. J.

Evergreen Lining-Out Stock TRANSPLANTS and SEEDLINGS

Pine, Spruce, Fir, Canadian Hemlock, Arborvitae, in variety. For growing Christmas trees. Windbreaks, Hedges, Forestry, Ornamentals. Prices low as to each on quantity orders. Write for price list. **SUNCREST EVERGREEN NURSERIES, Dept. AFG, Box 645, Johnstown, Penn.**

Dependable Fruit and Nut Trees, Small Fruits, Ornamentals, and General Nursery Stock. Write for Free Color Catalogue.

CUMBERLAND VALLEY NURSERIES, Inc.
Box 101, McMinville, Tennessee

FRUIT TREES

We specialize in growing High Quality Nursery Stock for Fruit Growers. A complete line of Fruit and Nut Trees, Berry Plants, Roses, Evergreens and Flowering Shrubs. Write for colored Catalogue with Money Saving Prices.

EAST'S NURSERY
BOX 450, AMITY, ARKANSAS

Hardy CLARK DWARF apple trees. Autumn Strawberry, Red Delicious, Grimes, Jonathan, Sharpe and Turkey. Hardest known dwarf apple trees. \$3.50 each, 3 for \$10.00.

OLD HOME PEAR—Blight resistant. HIBERNAL and VIRGINIA CRAB for top-working apples. LATHAM raspberries, priced low, also MORRISON and SODUS, Dwarf JUNE BERRIES.
JUNE ROCKMILL Strawberry. Plant patent No. 854. No other so high in quality. Has every long-sought strawberry characteristic. Hardiness, disease resistance, good bearer, long season, sweet, truly marvelous flavor, red all through, no core, long stiff stems hold the berries off the ground and it really looks like freezing.

WHEELLOCK WILSON NURSERY
Marshalltown, Iowa

GROW STRAWBERRIES

Write for Catalogue and free-growing book of strawberry, raspberry, and numerous other items.
STEVENSON & CO., PERRY, LAKE CO., OHIO

EDITORIAL PAGE



Better Peaches

FOR THE past decade, there has been an active movement in the peach industry to ship riper peaches in packages better designed to protect the fruit against bruising and cutting.

The unripe peach has been jeeringly referred to as bullet-hard. Scores of surveys have shown that the housewife prefers "tree-ripened" peaches and will buy more of the riper fruit.

In many cases, the grower would like to give the housewife "tree-ripened" fruits but he is blocked by several important considerations. Some middlemen will accept only hard peaches, fearing that the fruit may ripen or rot before they can dispose of it. Some progressive growers have been penalized on price for attempting to do a better job with better containers and riper fruit, on the grounds that the fruit is over-ripe. The Trade just hasn't wanted it.

Further, the threat of brown rot in most seasons has made it imperative to get peaches off the trees as quickly as possible. A few hot days and the crop may be ruined. Probably the greatest progress towards "tree-ripened" fruit has been made in California where brown rot is not a problem and where State marketing laws are in force to raise the standards of maturity.

Happily, there are now two factors which should help to improve the quality of peaches to the consumer. One is the increased use of cold storage, rapid handling, and precooling, and the development of equipment designed to take the field heat out of peaches quickly and help eliminate the threat of brown rot. The hydrocooler has passed the experimental stage and is gradually being adopted by packing houses. The pre-cooled and refrigerated truck is here.

Secondly, there is an increasing realization on the part of the grower that it is his job to educate the wholesale trade to improved fruit and to

better handling methods. Growers must take the responsibility for an educational campaign aimed at the whole marketing and handling machinery or progress is blocked. With 90 or 100 million bushels of peaches in prospect one of these days, it is time to begin.

United Effort Pays Dividends

THE 1949 National Apple Week was a definite success and an improvement over that of the previous year," states the annual report of the National Apple Week Association. Judging by the amount of publicity received, which is listed in the report, this is an understatement.

The National Apple Week Association is sponsored by the various State apple commissions, regional apple institutes, horticultural societies, and the International Apple Association, which contribute financially to its support. In addition, individuals and firms may become members by paying an initial entrance fee of \$10 and dues of \$10 a year.

According to the annual report of the association, last year's National Apple Week celebration was given publicity in 20 national magazines as well as in a large number of daily newspapers. The radio also did its share. There was widespread and active participation, too, by companies and organizations in allied fields, including the chain stores, food distributing concerns, etc. Over 100 committees arranged local celebrations on a State and county basis.

Every apple grower should have a copy of this report, which may be obtained free by writing the National Apple Week Association, 154 East Avenue, Rochester 4, N.Y.

Over-Production Vs. Under-Consumption

ADMITTEDLY, the human stomach will hold only so much food, and the nutritional requirements of a man have a level beyond which it is impractical to go.

Can, then, the per capita consumption of fruit be increased by advertising and merchandising?

The California Fruit Growers Exchange speaks of 25 million boxes of oranges in 1915, 50 million in 1925, 100 million in 1935, and 200 million in 1945. And they show the steady decline in consumption of apples, potatoes, and other less-advertised products.

The per capita consumption of grapefruit declined the past year because of the freeze of January 31, 1949, in the Gulf States, which markedly reduced supplies. Immediately, the consumption of other fruits increased—just about enough to balance—indicating again that to increase the consumption of any food it becomes a question of keeping one item out and letting another in.

Activities of the United Fresh Fruit & Vegetable Association and the Research and Marketing Administration show that sales of fresh fruit can be increased through retailer education. Schools have been held for retailers on care and display of fresh fruits and vegetables. Retailers are shown how to trim the product, how to keep it fresh, how to display it most attractively, and otherwise how to appeal to the consumer. Preliminary results have reported up to 30 per cent increased sales as a result. On a national level, this could be of tremendous importance.

Not all the so-called Hope-Flanagan projects have been so successful. In fact, too many have been put into the hands of well-intentioned but unenlightened economists who think in terms of graphs and curves where the problem is one of down-to-earth commodity handling. The man who knows the commodity and how to handle it is frequently in a better position to serve than is the man who is more familiar with gold standards, foreign exchange, and trade balances. Yet, the commodity expert has been all but ignored. Sooner or later this should and will be changed. Combination of effort will better serve the industry and its problems.

Be that as it may, here is a project that seems to be "clicking." It points a way that may mean considerable to the fruit industry in the years immediately ahead.

Fruit Production at a Glance

	1938-47	1948	USDA Mar. 1, Est. 1950
Thousand Boxes:			
Oranges			
Calif., all	48,894	38,910	36,600
Navels & Misc.	19,068	11,910	13,600
Valencias	29,826	25,000	23,000
Florida, all	39,940	58,300	62,000
Early & Mid-season	21,765	32,000	34,000
Valencias	18,875	26,300	28,000
Other States	4,760	4,410	3,055
Total Early & Mid-season	43,701	47,260	49,575
Total Valencias	49,892	52,360	52,080
Tangerines	3,530	4,490	4,900
Grapefruit			
Florida	25,760	30,200	25,000
Texas	18,624	11,300	6,500
Other States	6,144	4,820	5,570
Lemons	13,184	9,930	11,500





Safe at home

Getting a run across the plate is like getting a freight shipment to its destination safely and on time.

As in baseball, it takes organization and teamwork to get results. It takes a hard-hitting group of experienced men.

One example of teamwork is Union Pacific's high "batting average" for transportation of perishable commodities. During a long period of time the records show a remarkably high monthly average of on-time deliveries.

We won't be satisfied until all shippers who patronize our railroad can sincerely say "That Union Pacific is a great outfit."



BE SPECIFIC: *Ship* UNION PACIFIC

Here's Why Your Crops Will Always Have
MORE PROTECTION
with
GENERAL CHEMICAL
Spray Materials



Maximum Deposits
Maximum Kill

IT TAKES THE FULLEST measure of spray protection all season long to pay off in top grades at picking time. Getting this result means using spray materials which you can count on for *maximum deposits on plant surfaces* and *maximum insect kill—in every spray application!*

WITH ORCHARD BRAND products, you can be sure of getting this *full measure of protection* day in and day out.

THAT'S BECAUSE EACH General Chemical Spray Material has the important

qualities of high deposit and maximum killing effectiveness built right into it . . . through extensive research . . . carefully controlled production . . . and thorough field testing. Only where products have this background can you be assured of high spray efficiency in your equipment and on your crop *every time.*

YES, THIS FULL MEASURE OF PROTECTION means *More* of the "Money" Fruit at picking time. So be sure—use Orchard Brand Spray Materials . . . first choice of commercial growers!

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Offices in Agricultural Centers from Coast to Coast

GENITOX* DDT
GENITHION†
(Parathion)

LEAD ARSENATE
(Astringent & Standard)

Nicotine Sulfate
BHC Wettable Powder
Micro-Dritomic* Sulfur
(for apple scab)

Dritomic* Sulfur
(for peach brown rot)

Carbamate Fungicides

Spraycop*
(Copper Fungicide)

Filmfast*
(Spreader-Sticker)

*Other organic and inorganic
insecticides and fungicides*

*Reg. U. S. Pat. Off.
†General Chemical Trade-Mark